UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, DC 20549

FORM 10-K

(Mark One)

☑ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the year ended December 31, 2023

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the transition period from to

Commission File Number 001-36362

BioLife Solutions, Inc.

(Exact name of registrant as specified in its charter)

Delaware	**94-3076866**
(State or other jurisdiction of incorporation or organization)	*(IRS Employer Identification No.)*

3303 Monte Villa Parkway, Suite 310, Bothell, Washington, 98021
(Address of registrant's principal executive offices, Zip Code)

(425) 402-1400
(Telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading symbol	Name of exchange on which registered
Common stock, par value $0.001 per share	BLFS	The NASDAQ Stock Market, LLC

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark whether the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☑ No ☐

Indicate by check mark whether the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No ☑

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☑ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (S232.405 of this chapter) during the preceding 12 months (or for such shorter period that the Registrant was required to submit such said files). Yes ☑ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer ☑ Accelerated filer ☐ Non-accelerated filer ☐ Smaller reporting company ☐ Emerging Growth Company ☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☑

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements. ☐

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to §240.10D-1(b). ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes ☐ No ☑

As of the registrant's most recently completed second fiscal quarter, the aggregate market value of common equity (based on closing price on June 30, 2023 of $22.10 per share) held by non-affiliates was approximately $774 million.

As of February 22, 2024, 45.3 million shares of the registrant's common stock were outstanding.

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FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K ("Form 10-K" or "Annual Report") contains forward-looking statements which are made pursuant to the safe harbor provisions of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act"). The forward-looking statements in this Form 10-K do not constitute guarantees of future performance, and actual results could differ materially from those contained in the forward-looking statements. These statements are based on current expectations of future events. Such statements include, but are not limited to, statements about our products, customers, regulatory approvals, the potential utility of and market for our products and services, our ability to implement our business strategy and anticipated business and operations (including with respect to acquired businesses), future financial and operational performance, our anticipated future growth strategy, the expected benefits and other statements relating to our divestitures and acquisitions, capital requirements, intellectual property, suppliers, joint venture partners, future financial and operating results, the impact of macroeconomic developments (including the ongoing effects of the coronavirus ("COVID-19") pandemic, plans, objectives, expectations and intentions, revenues, costs and expenses, interest rates, outcome of contingencies, business strategies, regulatory filings and requirements, the estimated potential size of markets, the terms of any capital financing agreements and other statements that are not historical facts. You can find many of these statements by looking for words like "believes", "expects", "anticipates", "estimates", "may", "should", "will", "could", "plan", "intend", or similar expressions in this Form 10-K. We intend that such forward-looking statements be subject to the safe harbors for such statements.

These forward-looking statements are based on the current beliefs and expectations of our management and are subject to significant risks and uncertainties. If underlying assumptions prove inaccurate or unknown risks or uncertainties materialize, actual results may differ materially from current expectations and projections. Factors that might cause such a difference include those discussed under "Risk Factors", as well as those discussed elsewhere in the Form 10-K.
You are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date of this Form 10-K or, in the case of documents referred to or incorporated by reference, the date of those documents.

All subsequent written or oral forward-looking statements attributable to us or any person acting on our behalf are expressly qualified in their entirety by the cautionary statements contained or referred to in this section. We do not undertake any obligation to release publicly any revisions to these forward-looking statements to reflect events or circumstances after the date of this Form 10-K or to reflect the occurrence of unanticipated events, except as may be required under applicable United States ("U.S.") securities law. If we do update one or more forward-looking statements, no inference should be drawn that we will make additional updates with respect to those or other forward-looking statements.

References throughout this Form 10-K to "BioLife Solutions, Inc.", "BioLife", "we", "us", "our", or the "Company" refer to BioLife Solutions, Inc. and its subsidiaries, taken as a whole, unless the context otherwise indicates.

PART I

ITEM 1. BUSINESS

The following discussion of our business contains forward-looking statements that involve risks and uncertainties (see the section entitled "Forward-Looking Statements" herein). Our actual results could differ materially from those anticipated in these forward-looking statements as a result of certain factors, including those factors set forth under "Risk Factors" and elsewhere in this Form 10-K.

Overview

We are a life sciences company that develops, manufactures, and markets bioproduction tools and services which are designed to improve quality and de-risk biologic manufacturing, storage, distribution, and transportation in the cell and gene therapy ("CGT") industry and broader biopharma markets. Our products are used in basic and applied research and commercial manufacturing of biologic-based therapies. Customers use our products to maintain the health and function of biologic material during sourcing, manufacturing, storage, and distribution.

We currently operate as one bioproduction tools and services business which supports several steps in the biologic material manufacturing and delivery process. We have a diversified portfolio of tools and services that focuses on biopreservation, cell processing, frozen biologic storage products and services, cold-chain logistics, and thawing of biologic materials. We have in-house expertise in cryobiology and the broader CGT workflow, and continue to evaluate opportunities to maximize the value of our product platforms for our extensive customer base through organic growth innovations, partnerships, and acquisitions.

Our products

Our bioproduction tools and services are comprised of three revenue lines that contain seven main offerings:

- Cell processing
  - Biopreservation media
  - Human platelet lysate media ("hPL"), cryogenic vials, and automated cell-processing fill machines
- Freezers and thaw systems
  - Ultra-low temperature freezers
  - Cryogenic freezers and accessories
  - Automated thawing devices
- Biostorage services
  - Biological and pharmaceutical material storage and transport
  - Cloud-connected "smart" shipping containers

Subsequent to the second quarter of 2023, we began to seek divestment of our Global Cooling, Inc. ("GCI") and Custom Biogenic Systems ("CBS") freezer product lines (the "Freezer Business") from our current product portfolio. For additional information regarding our ongoing initiative to divest the Freezer Business, see "Item 1A. Risk Factors" of this Annual Report for additional details.

Cell processing

Biopreservation media

Our proprietary biopreservation media products, HypoThermosol® FRS and CryoStor® Freeze Media, are formulated to mitigate preservation-induced, delayed-onset cell damage and death which result when cells and tissues are subjected to reduced temperatures. Our technology can provide our CGT customers with significant shelf-life extension of biologic source material and final cell products, and can also greatly improve post-preservation cell and tissue viability and function. Our biopreservation media are serum-free, protein-free, fully defined, and manufactured under current Good Manufacturing Practices ("cGMP"). We strive to source wherever possible the highest available grade, Multi-compendial raw materials. Our US FDA Type II Master File applicable to our biopreservation products has been cross referenced over 690 times by our customers, and we believe our cell processing products are utilized in several hundred active clinical trials worldwide.

Stability (i.e. shelf-life) and functional recovery are crucial aspects of academic research and clinical practice in the biopreservation of biologic-based source material, intermediate derivatives, and isolated/derived/expanded cellular products and therapies. Limited stability is especially critical in the CGT field, where harvested cells and tissues will lose viability over time if not maintained appropriately at normothermic body temperature (37ºC) or stored in a hypothermic or cryogenic state in an effective preservation medium.

Chilling (hypothermia) is used to reduce metabolism and delay degradation of harvested cells and tissues. However, subjecting biologic material to hypothermic or cryogenic environments and subsequently rewarming them may also induce damaging molecular stress and structural changes. Although cooling successfully reduces metabolism (i.e., lowers demand for energy), various levels of cellular damage and death occur when using suboptimal methods. Biopreservation media can mitigate the damage from exposure to hypothermic or cryogenic temperatures and subsequent rewarming.

Traditional biopreservation media range from simple “balanced salt” (electrolyte) formulations to complex mixtures of electrolytes, energy substrates such as sugars, osmotic buffering agents, and antibiotics. The resulting limited stability from the use of these traditional biopreservation media formulations is a significant shortcoming that our optimized proprietary products address with great success.

Our scientific research activities over the last 20+ years enabled a detailed understanding of the molecular basis for the hypothermic and cryogenic (low-temperature induced) damage/destruction of cells through apoptosis and necrosis. This research led directly to the development of our HypoThermosol FRS and CryoStor technologies. Our proprietary biopreservation media products are specifically formulated to:

- Minimize cell and tissue swelling
- Reduce free radical levels upon formation
- Maintain appropriate low temperature ionic balances
- Provide regenerative, high-energy substrates to stimulate recovery upon warming
- Avoid the creation of an acidic state (acidosis)
- Inhibit the onset of apoptosis and necrosis

A key feature of our biopreservation media products is their “fully-defined” profile. All of our cGMP products are serum-free, protein-free and are formulated and filled using aseptic processing. We strive to use USP/Multi-compendial grade or the highest quality available synthetic components. All of these features benefit prospective customers by facilitating the qualification process required to incorporate our products into their regulatory filings.

Competing biopreservation media products are often formulated with isotonic media cocktails, animal serum, and potentially a single sugar or human protein. A key differentiator of our proprietary HypoThermosol FRS and CryoStor formulations is the engineered optimization of the key ionic component concentrations for low-temperature environments. This is in contrast to media optimized for normothermic body temperature (around 37°C), as found in culture media or saline-based isotonic formulas. While competing cryopreservation freeze media is often comprised of a single permeating cryoprotectant such as dimethyl sulfoxide (“DMSO”), our CryoStor formulations incorporate multiple permeating and non-permeating cryoprotectant agents, which allows for multiple mechanisms of protection and reduces the dependence on a single cryoprotectant. We believe that our products offer significant advantages over in-house ("home brew") formulations or commercial “generic” biopreservation media. These advantages include time savings, more consistent and higher quality of components, more rigorous quality control release testing, cost effectiveness, and improved preservation efficacy.

The results of independent testing demonstrate that our biopreservation media products significantly extend shelf-life and improve cell and tissue post-thaw viability and function. Our products have demonstrated improved biopreservation outcomes, including greatly extended shelf-life and post-thaw viability and yield across a broad array of cell and tissue types.

We estimate that annual revenue from each customer commercial application in which our products are used could range from $0.5 million to $2.0 million if such application is approved and our customer commences large scale commercial manufacturing of the biologic-based therapy.

Human platelet lysate media, cryogenic vials and automated cell-processing fill machines

In September 2021, we acquired Sexton Biotechnologies, Inc. (“Sexton”), a producer of bioproduction tools. Sexton's bioproduction tools portfolio includes human platelet lysates for cell expansion, which reduces risk and improves

downstream performance over fetal bovine serum, human serum, and other chemically defined media, CellSeal® closed system vials that are purpose-built rigid containers used in CGT that can be filled manually or with high throughput systems, and automated cell processing machines that bring multiple processes traditionally performed by manual techniques under a higher level of control to protect therapies from loss or contamination.

For our Sexton vials and media, we estimate that annual revenue from each customer commercial application in which these products are used could also range from $0.5 million to $2.0 million, if such application is approved and our customer commences large scale commercial manufacturing of the biologic-based therapy.

Biostorage services

Biological and pharmaceutical storage and transport

We are a premier provider of biological and pharmaceutical storage and cold chain logistics. These services ensure that materials are kept at controlled, target temperatures from the moment they leave the customer's premises to their ultimate return. Our state-of-the-art monitoring systems allow customers real time tracking of the storage temperatures of their materials throughout the logistics process.

We operate five storage facilities in the USA and one facility in the Netherlands.

Cloud connected "smart" shipping containers

We are a leading developer and supplier of next generation cold chain management tools for cell and gene therapies. Our cloud-connected shipping containers and evo.is cloud app allows biologic products to be traced and tracked in real time. Our evo platform consists of rentable cloud-connected shippers that include technologies enabling tracking software to provide customizable, real-time information on geolocation, payload temperature, ambient temperature, tilt of shipper, humidity, altitude, and alerts when a shipper has been opened. The evo Dry Vapor Shipper ("DVS") is specifically marketed for use with cell and gene therapies. The evo DVS has several design improvements over traditional competing shipping containers, providing benefits such as extended thermal performance, reduced liquid nitrogen recharge time, improved payload extractors, and the ability to maintain temperature for longer periods if the shipper is tilted on its side.

We partner with couriers with established logistic channels and distribution centers. This strategy greatly reduces the time and resource requirements associated with establishing our own logistics services, such as acquiring and maintaining fleets of delivery vehicles and building specialized facilities around the world. Partnerships with multiple white glove couriers allow us to scale our sales and marketing efforts by leveraging couriers' existing channel relationships, as well as the ongoing efforts of their sales and service teams. Courier partners provide promotional efforts by marketing our evo platform to their existing cell and gene therapy customers as a cost-effective and innovative solution.

Freezers and thaw systems

Ultra-low temperature freezers

Our portfolio of ultra-low temperature freezers range in size from portable units to stationary upright freezers, accommodating a wide variety of use cases. Users can configure these freezers to achieve temperatures between -20°C and -86°C. The portfolio was designed to be environmentally friendly and energy efficient, using as little as 2.8 kWh/day at temperatures of -80°C. The freezers do not use compressor-based or cascade refrigeration systems. Instead, they use patented free-piston Stirling engine technology that uses fewer moving parts.

Cryogenic freezers and accessories

Our line of cryogenic freezers offer leading design and manufacture of state-of-the-art liquid nitrogen laboratory freezers, cryogenic equipment and accessories. Our Isothermal LN2 freezers are constructed with a patented system which stores liquid nitrogen in a jacketed space in the walls of the freezer. This dry storage method eliminates liquid nitrogen contact with stored specimens, reducing the risk of cross-contamination and providing increased user safety in a laboratory setting by limiting liquid nitrogen contact injuries. To accommodate customer requirements, we offer customizable features, including wide bodied and extended height models. Our high-capacity controlled rate freezers ("HCFR") are designed for large volume storage with customizable freezing programs and the ability to monitor conditions in real time.

To accompany the offerings of cryogenic freezer equipment, we supply equipment for storing critically important biological materials. This storage equipment includes upright freezer racks, chest freezer racks, liquid nitrogen freezer racks, canisters/cassettes and frames, as well as laboratory boxes and dividers. Due to our onsite design and manufacturing capabilities, racks and canisters can be customized to address customers' varying requirements.

Automated thawing devices

The ThawSTAR® line includes thawing products that control the temperature and timing of the thawing process of biologic material. Our customizable, automated, water-free thawing products use algorithmic programmed heating plates to consistently bring biologic material from a frozen state to a liquid state in a controlled and consistent manner, helping reduce damage during the temperature transition while delivering critical process consistency across cell batches. Use of ThawSTAR products can also reduce risk of contamination versus using a traditional water bath.

Our market opportunity

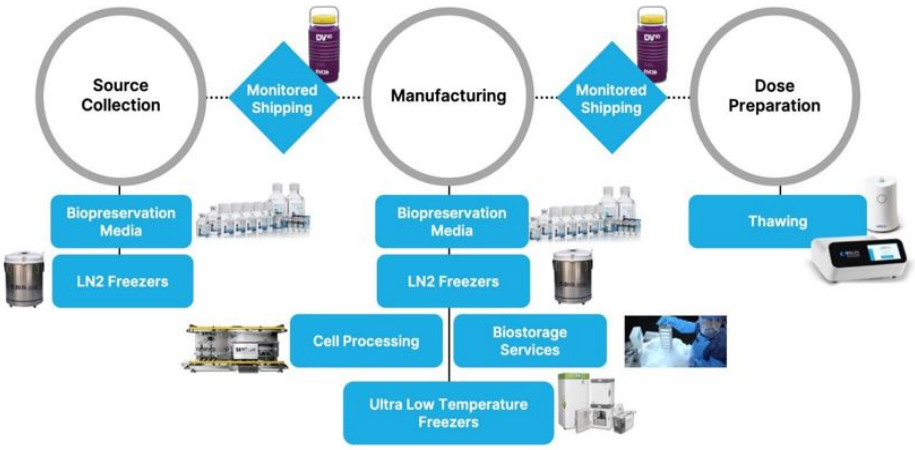
The CGT market has been rapidly expanding, treating diseases once thought incurable. According to the Alliance for Regenerative Medicine ("ARM"), "2024 State of the Industry Briefing" there were approximately 1,900 ongoing clinical trials utilizing regenerative medicine at year-end 2023, with continued growth in CGT development companies throughout 2023. ARM also reported there was approximately $12 billion invested in the regenerative medicine market in 2023. In addition, ARM predicts up to 17 US and EU cell and gene therapy regulatory approvals may be granted during 2024.

The technologies developed within the CGT market change the ways physicians treat patients. The manufacturing, distribution and the delivery process of these therapies is significantly different from many other types of treatments. We believe we are well positioned to address many of the unique manufacturing challenges in the process of delivering cell and gene therapies.

The bioproduction process

Our various products and services currently integrate into several steps in our customers' bioproduction workflow process for cell and gene therapies. See the diagram below for an illustration of this process and our product roles. We now offer products that integrate into the critical steps of preservation, thawing, and both fixed and transportable storage under controlled conditions.

Complementary products portfolio
Expanding Participation in Customers' Workflow



Our strategy

We are focused on the development, production, and commercialization of differentiated, best-in-class products and services that facilitate the manufacturing, delivery, and storage of cell and gene therapies and biologic materials. Our products are designed to increase our customers' product yield and we are committed to supporting our customers with strong customer service and applications expertise.

We leverage our numerous relationships with leading cell and gene therapy companies that use our expanded offering of bioproduction tools and services to cross-sell other parts of the portfolio. Over the last several years, we have built a strong reputation as a trusted supplier of critical tools used in cell and gene therapy and biopharma manufacturing. We believe that our relationships and reputation could enable us to drive further incremental revenue growth through the sale of additional products to a captive customer base. Our products are designed to increase our customers' product yield and functionality while reducing their risk, and we are committed to supporting our customers with strong service in addition to scientific and technical expertise in the applications of our products.

Business Operations

Research and development

Our research and development activities are focused on evaluating new, potentially disruptive technologies which may add value throughout the cell and gene therapy manufacturing and delivery workflow. We routinely assess and analyze the strengths and weaknesses of competitive and adjacent products, and are engaged in business development discussions on an ongoing basis. We strive to continue to anticipate customer needs in providing enabling technologies in the CGT space.

Sales and marketing

We market and sell our products through direct sales and third-party distribution. We have expanded our global commercial organization over time to continue building relationships within the broader CGT market.

We have experienced field-based sales employees who market our growing product portfolio on a direct basis. Our technical applications engineers and customer care support teams have extensive experience providing support both prior and subsequent to the sale of products.

Our products are also marketed and distributed by STEMCELL Technologies, MilliporeSigma, VWR, Avantor, Thermo Fisher, and several other regional distributors under non-exclusive agreements. In 2023, 2022, and 2021, sales to third-party distributors accounted for 49%, 50%, and 46% of our revenue, respectively.

During the years ended December 31, 2023, 2022, and 2021, we derived approximately 16%, 18%, and 17% of our revenue from the same customer, respectively.

The following table represents the Company's total revenue by geographic area (based on the location of the customer):

	Years Ended December 31,		
Revenue by customers' geographic locations[1]	**2023**	**2022**	**2021**
United States[2]	80 %	79 %	85 %
Europe, Middle East, Africa (EMEA)	16 %	16 %	11 %
Other	4 %	5 %	4 %
Total revenue	100 %	100 %	100 %

(1) During the year ended December 31, 2023, the Company updated its methodology for determining the country of origin for its sales. Sales are now recorded by shipping country rather than billing country. The Company updated the methodology retrospectively, adjusting the prior year presentation for all regions presented.

(2) The line item presented above previously bifurcated sales between the United States and Canada. Due to the updated methodology for determining the country of origin for sales, it was noted that Canada no longer was a material location to

separately disclose. Canada sales have been included within the "Other" line item in the table above and United States sales has been retained as its own line item to more accurately reflect origin of sales for material regions.

Manufacturing

Cell processing – We maintain and operate two independent cGMP clean room production suites for manufacturing sterile biopreservation media products in Bothell, Washington. Our quality management system (“QMS”) in Bothell is certified to the ISO 13485:2016 standard. Our QMS takes guidance from applicable sections of 21 CFR Part 820 – Quality System Regulation for Good Manufacturing Practice of medical devices, 21 CFR Parts 210 and 211 – cGMP for Finished Pharmaceuticals, FDA Guidance – Sterile Drug Products, Volume 4, EU Guidelines Annex 1 – Manufacture of Sterile Medicinal Products, ISO 13408 – Aseptic Processing of Healthcare Products, and ISO 14644 – Clean Rooms and Associated Controlled Environments.

We also maintain and operate one cGMP clean room production suite for manufacturing hPL media in Indianapolis, Indiana. Our quality management system (“QMS”) in Indianapolis is certified to the ISO 9001:2015 standard. Our QMS takes guidance from applicable sections of 21 CFR Part 820 – Quality System Regulation for Good Manufacturing Practice of medical devices, 21 CFR Parts 210 and 211 – cGMP for Finished Pharmaceuticals, Volume 4, EU Guidelines Annex 2 – Manufacture of Biological active substances and Medicinal Products for Human Use and ISO 14644 – Clean Rooms and Associated Controlled Environments.

We seek to manage single-source supplier risk by regularly assessing the quality and capacity of our suppliers, implementing supply and quality agreements where appropriate, and actively managing lead times and inventory levels of sourced components. Pursuant to our supply agreements, we are required to notify customers of any changes to our raw materials. For certain components without a secondary supplier, we estimate that it would take up to six months to find and qualify a second source. Order quantities and lead times for externally sourced components are based on our forecasts, which are derived from historical demand and anticipated future demand. Lead times for components may vary depending on the size of the order, specific supplier requirements, and current market demand for the materials and parts.

We practice continuous improvement based on routine internal audits through our own monitoring of process outputs, external feedback, and audits performed by our partners and customers. In addition, we maintain a business continuity management system that focuses on key areas such as contingency planning, safety stocks and off-site storage of raw materials and finished goods to ensure continuous supply of our products.

Freezers and thaw systems – Ultra-low temperature (“ULT”) freezers are produced in our facilities in Athens, Ohio. As of the second quarter in 2023, we fully transitioned two freezer product lines under our ULT manufacturing operations from a contract manufacturing organization ("CMO") in Ohio to in-house production within the Athens, Ohio facility.

The majority of our isothermal LN2 freezers and related accessories are manufactured in our facility in Bruce Township, Michigan. We are reliant on certain critical suppliers for some components. To date, we have not experienced significant difficulties in obtaining raw materials for the manufacture of our LN2 freezers and related accessories.

Our ThawSTAR automated, water-free thawing products are produced by a CMO based in the United States. We believe this CMO has the skills, experience and capacity needed to meet our quality standards and demand expectations for the product line. We estimate that it would take up to six months to find and qualify an alternative CMO. To date, we have not experienced significant difficulties in obtaining our automated thaw products from our CMO.

Biostorage services – Production of our evo cold chain management hardware products is performed by external CMOs and by personnel in our Bruce Township, Michigan facility. As of the year-ended December 31, 2023, we fully transitioned our manufacturing operations from Albuquerque, New Mexico to our facility in Bruce Township, Michigan. We leased a new, smaller facility in Albuquerque, New Mexico to retain engineering and administrative operations personnel. Our QMS is certified to the ISO 9001:2015 standard.

SciSafe operates five cGMP compliant storage facilities in the United States and one facility in the Netherlands, which is registered with the European Regulatory body in Netherlands (IGJ) for Good Distribution of Active Pharmaceutical Ingredients. One facility in the United States is certified to the ISO 20387:2018 standard, and all facilities, both in the United States and the Netherlands, are certified to the ISO 9001:2015 standard. We rely on outside suppliers for the build-out of our cold-storage chambers and stand-alone freezers.

Supply chain constraints - Our domestic and international supply chain operations were affected during the years ended December 31, 2021 and 2022 by the global COVID-19 pandemic and the resulting volatility and uncertainty it caused in the U.S. and international markets. The onset of the COVID-19 pandemic caused supply chains globally to become constrained, and these constraints historically impacted our business through both increased difficulty in obtaining semiconductor chips and increased pricing on available parts across our product lines during the years ended December 31, 2021 and 2022. However, during the year ended December 31, 2023, both availability and pricing of semiconductor chips have improved and no longer pose constraints on our supply chain. We currently have sufficient supply for electrical component parts within our operations and do not foresee constraints to return over our supply chain.

Product regulatory status

Our products are not subject to any specific United States Food and Drug Administration ("FDA") or other international marketing regulations for drugs, devices, or biologics. We are not required to sponsor formal prospective, controlled clinical trials in order to establish safety and efficacy. However, to support our current and prospective clinical customers, we manufacture and release our products in compliance with cGMP and other relevant quality standards.

To assist customers with their regulatory applications, we maintain Type II Master Files at the FDA for CryoStor, HypoThermosol FRS, BloodStor 27, Stemulate, nLiven PR, T-Liven PR, CellSeal Closed System Cryogenic Vials, and our Cell Thawing Media products, which provide the FDA with information regarding our manufacturing facility and process, our quality system, stability and safety, and any additional testing that has been performed. Customers engaged in clinical and commercial applications may notify the FDA of their intention to use our products in their product development and manufacturing process by requesting a cross-reference to our master files.

A group of isothermal, standard, and carousel LN2 freezers in our freezers and thaw systems product line is currently regulated as Class 2 medical devices in the EU.

Intellectual property

The following table lists our granted and pending patents. We have also obtained certain trademarks and tradenames for our products to distinguish our genuine products from our competitors' products and we maintain certain details about our processes, products, and strategies as trade secrets. While we believe that the protection of patents and trademarks is important to our business, we also rely on a combination of trade secrets, nondisclosure and confidentiality agreements, scientific expertise, and continuing technological innovation to maintain our competitive position. Despite these precautions, it may be possible for unauthorized third parties to copy certain aspects of our products and/or to obtain and use information that we regard as proprietary (see "Item 1A. Risk Factors" of this Annual Report for additional details). The laws of some foreign countries in which we sell our products do not protect our proprietary rights to the same extent as do the laws of the United States.

	Issued Patents	Patents Applied For	Registered Trademarks
Cell processing	56	16	41
Freezers and thaw systems	85	71	25
Biostorage services	13	33	6
Total	**154**	**120**	**72**

Competition

Our bioproduction products and services compete on the basis of value proposition, performance, quality, cost effectiveness, and application suitability with numerous established technologies. Additional products using new technologies that may be competitive with our products may also be introduced. Many of the companies selling or developing competitive products have greater financial and human resources, R&D, manufacturing and marketing experience than we do. They may undertake their own development of products that are substantially similar to or compete with our products, and they may succeed in developing products that are more effective or less costly than any that we may develop. These competitors may also prove to be more successful in their production, marketing and commercialization activities. We cannot be certain that the research, development and commercialization efforts of our competitors will not render any of our existing or potential products obsolete.

Human capital

We view our employees and our culture as key to our success. As of December 31, 2023, we had 409 full time employees and 5 part-time employees. Our employees are not covered by any collective bargaining agreement. We consider relations with our employees to be good.

Since March 2020, we have operated with a flexible work environment in which positions not essential to being on-site may embrace hybrid ways of working. Overall, we aim to preserve the flexibility offered by hybrid work arrangements while offering our employees a healthy, supportive, and inclusive environment that supports their development, provides connection, and propels team and individual performance.

Corporate history

We were incorporated in Delaware in 1987 under the name Trans Time Medical Products, Inc. In 2002, the Company, then known as Cryomedical Sciences, Inc. was engaged in manufacturing and marketing cryosurgical products. The entity was merged with our wholly owned subsidiary, BioLife Solutions, Inc., which was engaged as a developer and marketer of biopreservation media products for cells and tissues. Following the merger, we changed our name to BioLife Solutions, Inc.

Principal offices; available information

Our principal executive offices are located at 3303 Monte Villa Parkway, Suite 310, Bothell, Washington 98021 and the telephone number is (425) 402-1400. We maintain a website at www.biolifesolutions.com. The information contained on or accessible through our website is not part of this Annual Report on Form 10-K and is not incorporated in any manner into this Annual Report. Our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and amendments to reports filed or furnished pursuant to Sections 13(a) and 15(d) of the Securities Exchange Act of 1934 (the "Exchange Act"), are available free of charge on our website as soon as reasonably practicable after we electronically file such reports with, or furnish those reports to, the Securities and Exchange Commission (the "SEC"). The SEC also maintains an Internet site that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC at http://www.sec.gov.

ITEM 1A. RISK FACTORS

Investing in our common stock involves a high degree of risk. You should carefully consider the risks and uncertainties described below, together with all of the other information contained in this Annual Report, before deciding to invest in our common stock. If any of the following risks materialize, our business, financial condition, results of operation and prospects will likely be materially and adversely affected. In that event, the market price of our common stock could decline and you could lose all or part of your investment.

Risks related to our financial condition

Despite our increasingly diversified customer base, we depend on a limited number of customers and products in a limited number of market sectors. If we lose any of these large customers or if there are disruptions in the sales of these products, our net product revenue and operating results could decline significantly.

During the years ended December 31, 2023, 2022, and 2021, we derived approximately 16%, 18%, and 17% of our revenue from the same customer, respectively. No other customer accounted for more than 10% of revenue in the years ended December 31, 2023, 2022 and 2021. In the years ended December 31, 2023, 2022, and 2021, we derived approximately 39%, 36%, and 33% of our revenue from CryoStor products, respectively. Additionally, during the years ended December 31, 2023, 2022 and 2021, we derived approximately 19%, 22% and 22% of our revenues from our 780XLE freezers, respectively. Our principal customers may vary from period to period and such customers may not continue to purchase products from us at current levels or at all. Further, the inability of some of our customers to consummate anticipated purchases of our products due to changes in end-user demand, and other unpredictable factors that may affect customer ordering patterns could lead to significant reductions in net product revenue which could harm our business.

We expect our operating results to fluctuate significantly from period to period.

Our revenue, operating margins and other operating results have varied significantly in the past and may continue to fluctuate from period to period in the future due to a variety of factors, many of which are beyond our control. Factors relating to our business that may contribute to these fluctuations include changes in customer demand, pricing pressures applicable to our products, the length of our sales cycles, supply chain and inventory management, changes in competitive conditions, including the introduction of new products and enhancements by our competitors, among other factors described elsewhere in this Annual Report. In addition, following our acquisitions from 2019 through 2021, we have increased our fixed costs and now sell products having higher costs of product revenue than our biopreservation media products. We expect that the result of these acquisitions and subsequent operational decisions regarding the businesses acquired will make it more difficult to predict our revenue and operating results from period-to-period and that, as a result, comparisons of our results of operations are not currently and will not be for the foreseeable future a good indicator of our future performance. For example, if revenue declines in a quarter, whether due to a delay in recognizing expected revenue, adverse economic conditions, supply chain issues or otherwise, our results of operations in such period will be harmed because many of our expenses are now relatively fixed. In particular, a large portion of our manufacturing costs, research and development expenses, sales and marketing expenses and general and administrative expenses are not significantly affected by variations in revenue. Further, a shift in product revenue concentration away from our CryoStor products and towards other developing products with higher costs of product revenue will adversely affect our operating margin. If our quarterly operating results fail to meet expectations of investors or research analysts, the price of our common stock may decline.

We have announced that we intend to divest our Freezer Business. The failure to complete such divestiture on favorable terms or at all, or the pursuit of such divestiture, could adversely affect our businesses, results of operations and financial condition.

Subsequent to the second quarter of 2023, we began to actively seek divestment of our Freezer Business to optimize the performance of our product portfolio. Although we are diligently pursuing a sale of the Freezer Business, no potential buyer has yet committed to purchasing the business and we have not yet entered into any agreement for the sale of such business. We may not be successful in selling our Freezer Business in a timely manner, if at all, or may do so on terms that are less favorable than we currently anticipate. If the Freezer Business is not sold as an ongoing business, we may have to liquidate those assets and incur substantial costs to shut down those operations. In addition, we have already recorded impairment charges over the property and equipment and definitive-lived intangible assets of the Freezer Business, as reflected in our consolidated financial statements. See Note 2: *Impairment of property and equipment and definite-lived intangible assets*, to our consolidated financial statements included in this Annual Report on Form 10-K for more information. If the Freezer Business is sold, it is possible that the net proceeds from the sale could be less than its current

carrying value on our books, which would require us to take an additional impairment charge against our earnings in the amount of the difference, which could be significant. Moreover, the announcement and conduct of the divestiture process could cause disruptions in, and create uncertainty surrounding, our Freezer Business, including affecting relationships with its existing and future customers, suppliers and employees, which could have an adverse effect on the Freezer Business's operations and financial condition, potentially making it more difficult to successfully complete a transaction on favorable terms. The divestiture process may also divert our management's attention from overseeing and exploring opportunities that may be beneficial to our other businesses and operations. If we are unable to complete a divestiture of our Freezer Business on favorable terms or at all, we may suffer negative publicity, and our business, results of operations, and financial condition may be adversely affected and the price of our common stock may decline.

Risks related to our acquisition strategy

If intangible assets and goodwill that we recorded in connection with our acquisitions become impaired, we may have to take significant charges against earnings.

In connection with the accounting for our completed acquisitions in recent years, we recorded a significant amount of intangible assets, including developed technology, in-process research and development, and customer relationships relating to the acquired product lines, and goodwill. As of December 31, 2023, the net carrying value of our goodwill and other intangible assets totaled $245.9 million. Under generally accepted accounting principles in the United States, we must assess, at least annually and potentially more frequently, whether the value of indefinite-lived intangible assets and goodwill have been impaired. Intangible assets and goodwill are assessed for impairment in the event of an impairment indicator, as was the case in the third quarter of 2023 when we began to actively seek divestment of our GCI and CBS freezer product lines (the "Freezer Business"). The announcement, coupled with broader economic uncertainty leading to reductions in spending across the biopharma industry and our customer base constituted interim triggering events that required further analysis with respect to potential impairment to goodwill, indefinite-lived intangibles, and our long-lived asset groups. As a result of the interim quantitative impairment analysis performed, we recorded a $5.8 million non-cash impairment charge over definite-lived intangible assets reflected in our consolidated statements of operations. Any future reduction or impairment of the value of intangible assets and goodwill will result in a charge against earnings, which could materially adversely affect our results of operations and shareholders' equity in future periods.

Our acquisitions expose us to risks that could adversely affect our business, and we may not achieve the anticipated benefits of acquisitions of businesses or technologies.

As a part of our growth strategy, we have made, and may continue to make, selected acquisitions of complementary products and/or businesses. Any acquisition involves numerous risks and operational, financial, and managerial challenges, including the following, any of which could adversely affect our business, financial condition, or results of operations:

- difficulties in integrating new operations, technologies, products, and personnel;
- problems maintaining uniform procedures, controls, and policies with respect to our financial accounting systems;
- lack of synergies or the inability to realize expected synergies and cost-savings;
- difficulties in managing geographically dispersed operations, including risks associated with entering foreign markets in which we have no or limited prior experience;
- underperformance of any acquired technology, product, or business relative to our expectations and the price we paid;
- negative near-term impacts on financial results after an acquisition, including acquisition-related earnings charges;
- the potential loss of key employees, customers, and strategic partners of acquired companies;
- claims by terminated employees and shareholders of acquired companies or other third parties related to the transaction;
- the assumption or incurrence of additional debt obligations or expenses, or use of substantial portions of our cash;
- diversion of management's attention and company resources from existing operations of the business;
- inconsistencies in standards, controls, procedures, and policies;
- cash expenses and non-cash accounting charges incurred in connection with acquisitions, including unanticipated costs associated with the amortization of intangible assets;
- the impairment of intangible assets as a result of technological advancements, or worse-than-expected performance of acquired companies;

- assumption of, or exposure to, historical liabilities of the acquired business, including unknown contingent or similar liabilities, including product liability, that are difficult to identify or accurately quantify; and
- risks associated with acquiring intellectual property, including potential disputes regarding acquired companies' intellectual property.

In addition, the successful integration of acquired businesses requires significant efforts and expense across all operational areas, including sales and marketing, research and development, manufacturing, finance, legal, and information technologies. Our acquisitions we may not be successful or may not be, or remain, profitable. Our failure to successfully address the foregoing risks may prevent us from achieving the anticipated benefits from any acquisition in a reasonable time frame, or at all.

Our recent acquisitions may result in unexpected consequences to our business and results of operations.

Although we believe that our acquired product lines will generally be subject to risks similar to those to which we are subject to in our existing operations, we may not have discovered all risks applicable to these businesses during the due diligence process. Some of these risks could produce unexpected and unwanted consequences for us. Undiscovered risks may result in us incurring financial liabilities, which could be material and have a negative impact on our business operations.

We may engage in future acquisitions or other strategic transactions which may require us to seek additional financing or financial commitments, increase our expenses and/or present significant distractions to our management.

We continue to actively evaluate opportunities and consider other strategic transactions to grow our portfolio of bioproduction tools and services for the cell and gene therapy and broader biopharma markets. In the event we engage in an acquisition or strategic transaction, including by making an investment in another company, we may need to acquire additional financing. Obtaining financing through the issuance or sale of additional equity and/or debt securities, if possible, may not be at favorable terms and may result in additional dilution to our current stockholders (which in the case of certain of our prior acquisitions were significant). We also may be unable to issue our equity to finance or as consideration for any acquisition if the price of our common stock decreases or is volatile. Additionally, any such transaction may require us to incur non-recurring or other charges, may increase our near and long-term expenditures and may pose significant integration challenges or disrupt our management or business, which could adversely affect our operations and financial results. For example, an acquisition or strategic transaction may entail numerous operational and financial risks, including the risks outlined above and additionally:

- exposure to unknown financial or product liabilities;
- disruption of our business and diversion of our management's time and attention in order to negotiate and close on such transaction or develop acquired products or technologies;
- higher than expected acquisition and integration costs;
- write-downs of assets or goodwill or impairment charges;
- increased amortization expenses;
- difficulty and cost in combining the operations and personnel of any acquired businesses with our operations and personnel;
- impairment of relationships with key suppliers or customers of any acquired businesses due to changes in management and ownership; and
- inability to retain key employees of any acquired businesses.

Accordingly, any transactions that we complete could have a material adverse effect on our business, results of operations, financial condition, and prospects.

Risks related to our business and operations

Healthcare reform measures could adversely affect our business and financial results.

The efforts of governmental and third-party payors to contain or reduce the costs of healthcare and, more generally, to reform the U.S. healthcare system may adversely affect the business and financial condition of pharmaceutical and biotechnology companies, including ours. Specifically, in both the United States and some foreign jurisdictions, there have been a number of legislative and regulatory proposals to change the healthcare system in ways that could affect our ability to sell our products profitably, including by limiting the prices we are able to charge for our products, the amounts of reimbursement available for our products or the acceptance and availability of our products. Efforts by governments and

other third-party payors to contain or reduce the costs of healthcare through various means may limit our commercial opportunities and adversely affect our operating results and result in a decrease in the price of our common stock or limit our ability to raise capital.

If our products or the products of our competitors do not perform as expected or the reliability of the technology on which our products are based is questioned, we could experience lost revenue, delayed or reduced market acceptance of our products, increased costs, and damage to our reputation.

Our success depends on the market's confidence that we can provide reliable, high-quality products to our customers. We believe that customers in our target markets are likely to be particularly sensitive to product defects and errors. Our reputation and the public image of our products and technologies may be impaired if our products or similar products of our competitors fail to perform as expected. In the future, if our products experience, or are perceived to experience, a material defect or error, this could result in loss or delay of revenues, delayed or reduced market acceptance, damage to our reputation, diversion of development resources, legal claims, increased insurance costs or increased service and warranty costs, any of which could harm our business, financial condition or results of operations. Such defects or errors could also narrow the scope of the use of our products, which could hinder our success in the market. Even after any underlying concerns or problems are resolved, any lingering concerns in our target market regarding our technology or any manufacturing defects or performance errors in our products could continue to result in lost revenue, delayed or reduced market acceptance, damage to our reputation, increased service and warranty costs and claims against us.

We operate in a highly competitive industry and if we cannot compete effectively, our business, financial condition and operating results could be materially and adversely affected.

The life sciences industry is highly competitive and subject to rapid technological change. We anticipate that we will continue to face increased competition as existing companies may choose to develop new or improved products and as new companies enter the market with new technologies, any of which could compete with our products or even render our products obsolete. Many of our competitors are significantly larger than us and have greater financial, technical, research, marketing, sales, distribution and other resources than us and may have longer operating histories. These companies may develop technologies that are superior alternatives to our products or may be more effective at commercializing and marketing their technologies in products. We may need to improve our existing technologies or develop new technologies for our products to remain competitive. Our future success depends on our ability to compete effectively against current technologies, as well as to respond effectively to technological advances by developing and marketing products that are competitive in the continually changing technological landscape. Our competitors may succeed in developing or marketing technologies and products that are more effective or commercially attractive than any that are being developed or marketed by us, or may succeed in obtaining regulatory approval, or introducing or commercializing any such products, prior to us. Such developments could have a material adverse effect on our business, financial condition and results of operations. Also, even if we can compete successfully, we may not continue do so in a profitable manner.

We depend on outside suppliers for all our manufacturing supplies, parts and components.

We rely on outside suppliers, including several single-source suppliers, for all our manufacturing supplies, parts and components. There can be no assurance that, in the future, our current or alternative sources for manufacturing supplies will be able to meet all our demands on a timely basis. Unavailability of necessary components could require us to re-engineer our products to accommodate available substitutions, which could increase costs to us and/or have a material adverse effect on manufacturing schedules, products performance and market acceptance. In addition, an uncorrected defect or supplier's variation in a component or raw material, either unknown to us or incompatible with our manufacturing process, could harm our ability to manufacture products. We might not be able to find a sufficient alternative supplier in a reasonable amount of time, or on commercially reasonable terms, if at all. If we fail to obtain an alternative supplier for the components of our products, our operations could be disrupted.

Our success will depend on our ability to attract and retain key personnel.

In order to execute our business plan, we must attract, retain and motivate highly qualified managerial, scientific, manufacturing, and sales personnel. If we fail to attract and retain skilled scientific and sales personnel, our sales efforts will be hindered. Our future success depends to a significant degree upon the continued services of key scientific and technical personnel. If we do not attract and retain qualified personnel, we will not be able to achieve our growth objectives.

Difficulties in manufacturing could have an adverse effect upon our expenses and our product revenues.

We currently manufacture all of our biopreservation media products, freezer products and related components. We currently outsource the manufacturing of certain thaw products, certain cold chain products, two ULT freezer models, and components of our LN2 freezers. The manufacturing of our products is difficult and complex. To support our current and prospective clinical customers, we comply with, and intend to continue to comply with, cGMP in the manufacture of our products. Our ability to adequately manufacture and supply our products in a timely matter is dependent on the uninterrupted and efficient operation of our facilities and those of third parties manufacturing certain of our products or producing raw materials and supplies upon which we rely in our manufacturing. The manufacture of our products may be impacted by:

- availability or contamination of raw materials and components used in the manufacturing process, particularly those for which we have no other source or supplier;
- the ongoing capacity of our facilities and those of our outside manufacturers;
- our and our outside manufacturers' ability to comply with existing and new regulatory requirements, including cGMP;
- inclement weather and natural disasters;
- changes in forecasts of future demand for product components;
- potential facility contamination by microorganisms or viruses;
- updating of manufacturing specifications;
- product quality success rates and yields;
- labor strike; and
- global viruses and pandemics, including COVID-19.

If efficient manufacture and supply of our products is interrupted, we may experience delayed shipments or supply constraints. If we are at any time unable to provide an uninterrupted supply of our products to customers, our customers may be unable to supply their end-products incorporating our products to their patients and other customers, which could materially and adversely affect our product revenue and results of operations. In addition, if we are unable to procure a component from one of our outside manufacturers, we may be required to enter into arrangements with one or more alternative manufacturing companies, which may cause delays in producing components or result in significant increase in expenses.

While we are not currently subject to FDA or other regulatory approvals on substantially all of our products, if our products become subject to regulatory requirements, the manufacture and sale of our products may be delayed or prevented, or we may become subject to increased expenses.

None of our products are subject to FDA regulation. In particular, we are not required to sponsor formal prospective, controlled clinical-trials to establish safety and efficacy. A group of isothermal, standard, and carousel LN2 freezers in our freezers and thaw systems product line is currently regulated as Class 2 medical devices in the EU. Additionally, we comply with cGMP requirements and other relevant quality standards. This is done solely to support our current and prospective clinical customers. However, there can be no assurance that we will not be required to obtain approval from the FDA, or foreign regulatory authorities, as applicable, prior to marketing any of our products in the future. Any such requirements could delay or prevent the sale of our products or may subject us to additional expenses.

Our business may be subject to product liability claims or product recalls, which could be expensive and could result in a diversion of management's attention.

Our business exposes us to potential product liability risks that are inherent in designing, manufacturing, and marketing our products. In particular, we are a supplier of bioproduction tools to the cell and gene therapy industry. Our products are used in basic and applied research, and commercial manufacturing of biologic-based therapies. Customers use our products to maintain the health and function of biologic material during sourcing, manufacturing, storage, and distribution of cells and tissues, and component failures, manufacturing flaws, design defects or inadequate disclosure of product-related risks with respect to these or other products we manufacture or sell could result in an unsafe condition or injury. As a result, we face an inherent risk of damage to our reputation if one or more of our products are, or are alleged to be, defective. We may be exposed to risks from product liability and warranty claims in the event that our products actually or allegedly fail to perform as expected or the use of our products results, or is alleged to result, in bodily injury and/or property damage. The outcome of litigation, particularly any class-action lawsuits, is difficult to quantify. Plaintiffs often seek recovery of very large or indeterminate amounts, including punitive damages. The magnitude of the potential losses relating to these lawsuits may remain unknown for substantial periods of time and the cost to defend against any such litigation, whether or not we are found liable, may be significant. Accordingly, we could experience product liability losses in the future and

incur significant costs to defend these claims. While we maintain product liability insurance coverage, which we deem to be adequate based on historical experience, there can be no assurance that coverage will be available for such risks in the future or that, if available, it would prove sufficient to cover potential claims or that the present amount of insurance can be maintained in force at an acceptable cost to us.

In addition, if any of our products are, or are alleged to be, defective, we may voluntarily participate, or be required by applicable regulators, to participate in a recall of that product if the defect or the alleged defect relates to safety. In the event of a recall, we may experience lost sales and be exposed to individual or class-action litigation claims and reputational risk. Product liability, warranty and recall costs may have a material adverse effect on our business, financial condition and results of operations.

Insurance coverage is increasingly difficult to obtain or maintain.

While we currently maintain product liability insurance, directors' and officers' liability insurance, general liability insurance, and other types of insurance, first- and third-party insurance is increasingly more costly and narrower in scope, and we may be required to assume more risk in the future. If we are subject to third-party claims or suffer a loss or damage in excess of our insurance coverage, we may be required to share that risk in excess of our insurance limits. Furthermore, any first- or third-party claims made on our insurance policies may impact our future ability to obtain or maintain product liability insurance coverage at reasonable costs, if at all.

We are and may become the subject of various claims, litigation or investigations which could have a material adverse effect on our business, financial condition, or results of operations or the price of our common stock.

We are and may become subject to various claims (including "whistleblower" complaints), litigation or investigations, including commercial disputes and employee claims, and from time to time may be involved in governmental or regulatory investigations or similar matters. Some of these claims may relate to the activities of businesses that we have acquired, even though these activities may have occurred prior to our acquisition of such businesses. Any claims asserted against us or our management, regardless of merit or eventual outcome, could harm our reputation, distract our management and have an adverse impact on our relationship with our existing or prospective clients, distribution partners and other third-parties and could lead to additional related claims. Furthermore, there is no guarantee that we will be successful in defending ourselves in pending or future litigation or similar matters under various laws. Any judgments or settlements in any pending litigation or future claims, litigation or investigation could have a material adverse effect on our business, financial condition, or results of operations or the price of our common stock.

Risks related to our intellectual property and cyber security

Expiration of our patents may subject us to increased competition and reduce our opportunity to generate product revenue.

The patents for our products have varying expiration dates and, when these patents expire, we may be subject to increased competition and we may not be able to recover our development costs. In some of the larger economic territories, such as the United States and Europe, patent term extension/restoration may be available. We cannot, however, be certain that an extension will be granted or, if granted, what the applicable time or the scope of patent protection afforded during any extended period will be. If we are unable to obtain patent term extension/restoration or some other exclusivity, we could be subject to increased competition and our opportunity to establish or maintain product revenue could be substantially reduced or eliminated. Furthermore, we may not have sufficient time to recover our development costs prior to the expiration of our U.S. and non-U.S. patents.

Our proprietary rights may not adequately protect our technologies and products.

Our commercial success will depend on our ability to obtain patents and/or regulatory exclusivity and maintain adequate protection for our technologies and products in the United States and other countries. We will be able to protect our proprietary rights from unauthorized use by third-parties only to the extent that our proprietary technologies and products are covered by valid and enforceable patents or are effectively maintained as trade secrets.

We intend to apply for additional patents covering both our technologies and products, as we deem appropriate. We may, however, fail to apply for patents on important technologies or products in a timely fashion, if at all. Our existing patents and any future patents we obtain may not be sufficiently broad to prevent others from practicing our technologies or from developing competing products and technologies. In addition, the patent positions of life science industry companies are

highly uncertain and involve complex legal and factual questions for which important legal principles remain unresolved. As a result, the validity and enforceability of our patents cannot be predicted with certainty. In addition, we cannot guarantee that:

- we were the first to make the inventions covered by each of our issued patents and pending patent applications;
- we were the first to file patent applications for these inventions;
- others will not independently develop similar or alternative technologies or duplicate any of our technologies;
- any of our pending patent applications will result in issued patents;
- any of our patents will be valid or enforceable;
- any patents issued to us will provide us with any competitive advantages, or will not be challenged by third parties; and
- we will develop additional proprietary technologies that are patentable, or the patents of others will not have an adverse effect on our business.

The actual protection afforded by a patent varies on a product-by-product basis, from country to country and depends on many factors, including the type of patent, the scope of its coverage, the availability of regulatory related extensions, the availability of legal remedies in a particular country and the validity and enforceability of the patents. Our ability to maintain and solidify our proprietary position for our products will depend on our success in obtaining effective claims and enforcing those claims once granted. Our issued patents and those that may be issued in the future, or those licensed to us, may be challenged, invalidated, unenforceable or circumvented, and the rights granted under any issued patents may not provide us with proprietary protection or competitive advantages against competitors with similar products. We also rely on trade secrets to protect some of our technology, especially where it is believed that patent protection is inappropriate or unobtainable. However, trade secrets are difficult to maintain. While we use reasonable efforts to protect our trade secrets, our employees, consultants, contractors, or scientific and other advisors may unintentionally or willfully disclose our proprietary information to competitors. Enforcement of claims that a third party has illegally obtained and is using trade secrets is expensive, time consuming and uncertain. In addition, non-U.S. courts are sometimes less willing than U.S. courts to protect trade secrets. If our competitors independently develop equivalent knowledge, methods, and know-how, we would not be able to assert our trade secrets against them and our business could be harmed.

We may not be able to protect our intellectual property rights throughout the world.

Filing, prosecuting, and defending patents on all our products in every jurisdiction would be prohibitively expensive. Competitors may use our technologies in jurisdictions where we have not obtained patent protection to develop their own products. These products may compete with our products and may not be covered by any patent claims or other intellectual property rights.

The laws of some non-U.S. countries do not protect intellectual property rights to the same extent as the laws of the United States, and many companies have encountered significant problems in protecting and defending such rights in foreign jurisdictions. The legal systems of certain countries, particularly certain developing countries, do not favor the enforcement of patents and other intellectual property protection, particularly those relating to biotechnology, which could make it difficult for us to stop the infringement of our patents. Proceedings to enforce our patent rights in foreign jurisdictions could result in substantial cost and divert our efforts and attention from other aspects of our business.

If we fail to protect our intellectual property rights, our competitors may take advantage of our ideas and compete directly against us.

Our success will depend to a significant degree on our ability to secure and protect intellectual property rights and enforce patent and trademark protections relating to our technology. While we believe that the protection of patents and trademarks is important to our business, we also rely on a combination of copyright, trade secret, nondisclosure and confidentiality agreements, know-how and continuing technological innovation to maintain our competitive position. From time to time, litigation may be advisable to protect our intellectual property position. However, these legal means afford only limited protection and may not adequately protect our rights or permit us to gain or keep any competitive advantage. Any litigation in this regard could be costly, and it is possible that we will not have sufficient resources to fully pursue litigation or to protect our intellectual property rights. This could result in the rejection or invalidation of our existing and future patents. Any adverse outcome in litigation relating to the validity of our patents, or any failure to pursue litigation or otherwise to protect our patent position, could materially harm our business and financial condition. In addition, confidentiality

agreements with our employees, consultants, customers, and key vendors may not prevent the unauthorized disclosure or use of our technology. It is possible that these agreements will be breached or that they will not be enforceable in every instance, and that we will not have adequate remedies for any such breach. Enforcement of these agreements may be costly and time consuming.

We may incur substantial costs as a result of litigation or other proceedings relating to patent and other intellectual property rights, and we may be unable to protect our rights to, or use of, our technology.

If we choose to go to court to stop someone else from using the inventions claimed in our patents or our licensed patents, that individual or company has the right to ask the court to rule that these patents are invalid and/or should not be enforced against that third party. These lawsuits are expensive and would consume time and other resources even if we were successful in stopping the infringement of these patents. In addition, there is a risk that the court will decide that these patents are invalid or unenforceable and that we do not have the right to stop the other party from using the inventions. There is also the risk that, even if the validity or enforceability of these patents is upheld, the court will refuse to stop the other party on the grounds that such other party's activities do not infringe our rights.

If we wish to use the technology claimed in issued and unexpired patents owned by others, we will need to obtain a license from the owner, enter into litigation to challenge the validity or enforceability of the patents or incur the risk of litigation in the event that the owner asserts that we infringed its patents. The failure to obtain a license to technology or the failure to challenge an issued patent that we may require to discover, develop or commercialize our products may have a material adverse effect on us.

If a third party asserts that we infringed its patents or other proprietary rights, we could face a number of risks that could seriously harm our results of operations, financial condition and competitive position, including:

- patent infringement and other intellectual property claims, which would be costly and time consuming to defend, whether or not the claims have merit, and which could delay a product and divert management's attention from our business;
- substantial damages for past infringement, which we may have to pay if a court determines that our product or technologies infringe a competitor's patent or other proprietary rights;
- a court prohibiting us from selling or licensing our technologies unless the third party licenses its patents or other proprietary rights to us on commercially reasonable terms, which it is not required to do; and
- if a license is available from a third party, we may have to pay substantial royalties or lump-sum payments or grant cross licenses to our patents or other proprietary rights to obtain that license.

The biotechnology industry has produced a proliferation of patents, and it is not always clear to industry participants, including us, which patents cover various types of products or methods of use. The coverage of patents is subject to interpretation by the courts, and the interpretation is not always uniform. If we are sued for patent infringement, we would need to demonstrate that our products or methods of use either do not infringe the patent claims of the relevant patent, and/or that the patent claims are invalid, and/or that the patent is unenforceable, and we may not be able to do this. Proving invalidity, in particular, is difficult since it requires a showing of clear and convincing evidence to overcome the presumption of validity enjoyed by issued patents.

U.S. patent laws as well as the laws of some foreign jurisdictions provide for provisional rights in published patent applications beginning on the date of publication, including the right to obtain reasonable royalties, if a patent subsequently issues and certain other conditions are met.

Because some patent applications in the United States may be maintained in secrecy until the patents are issued, because patent applications in the United States and many foreign jurisdictions are typically not published until 18 months after filing, and because publications in the scientific literature often lag behind actual discoveries, we cannot be certain that others have not filed patent applications for technology covered by our issued patents or our pending applications, or that we were the first to invent the technology.

Patent applications filed by third parties that cover technology similar to ours may have priority over our patent applications and could further require us to obtain rights to issued patents covering such technologies. If another party files a U.S. patent application on an invention similar to ours, we may elect to participate in or be drawn into an interference proceeding declared by the U.S. Patent and Trademark Office to determine priority of invention in the United States. The costs of these proceedings could be substantial, and it is possible that such efforts would be unsuccessful, resulting in a loss

of our U.S. patent position with respect to such inventions. Some of our competitors may be able to sustain the costs of complex patent litigation more effectively than we can because they have substantially greater resources. In addition, any uncertainties resulting from the initiation and continuation of any litigation could have a material adverse effect on our ability to raise the funds necessary to continue our operations. We cannot predict whether third parties will assert these claims against us, or whether those claims will harm our business. If we are forced to defend against these claims, whether they are with or without any merit and whether they are resolved in favor of or against us, we may face costly litigation and diversion of management's attention and resources. As a result of these disputes, we may have to develop costly non-infringing technology, or enter into licensing agreements. These agreements, if necessary, may be unavailable on terms acceptable to us, if at all, which could seriously harm our business or financial condition.

Our inability to protect our systems and data from continually evolving cybersecurity risks or other technological risks, including as a result of breaches of our associated third parties' information technology systems, could affect our ability to conduct our business.

In conducting our business, we process, transmit and store sensitive, proprietary and confidential information about our employees, customers, vendors, and other parties, including business and personal information. This information may include account access credentials, credit and debit card numbers, bank account numbers, social security numbers, driver's license numbers, names and addresses and other types of sensitive business or personal information. Some of this information is also processed and stored by our third-party service providers to whom we outsource certain functions and other agents, including our customers, which we refer to collectively as our associated third parties.

We are a regular target of malicious third-party attempts, some of which have been successful, to identify and exploit system vulnerabilities and/or penetrate or bypass our security measures in order to gain unauthorized access to our networks and systems or those of our associated third parties. Such access has led and could lead in the future to the compromise of sensitive, business, personal or confidential information or instructions to transfer funds by us or customers to unauthorized recipients. In the third quarter during the year ended December 31, 2022, we experienced an immaterial security breach that successfully redirected payments from BioLife customers to unauthorized bank accounts. As a result, we proactively employ multiple methods at different layers of our systems to defend our systems against intrusion and attack and to protect the data we collect. These measures have been breached in the past, and we cannot be certain that they will be successful and sufficient to counter current and emerging technology threats that are designed to breach our systems in order to gain access to confidential information.

The techniques used to obtain unauthorized access, disable or degrade service, or sabotage systems change frequently and are often difficult to detect. Threats to our systems and our associated third parties' systems can derive and have derived from human error, fraud or malice on the part of employees or third parties, or may result from accidental technological failure, including as a result of natural disasters, power failures or other events beyond our control. Computer viruses and other malware can be distributed and have infiltrated, and could in the future infiltrate, our systems or those of our associated third parties. In addition, denial of service or other attacks could be launched against us for a variety of purposes, including to interfere with our services or create a diversion for other malicious activities. Our defensive measures in the past have not, and in the future, may not, prevent downtime, unauthorized access, or use of sensitive data. Further, while we select our associated third parties carefully, and we seek to ensure that our customers adequately protect their systems and data, we do not control their actions and are not able to oversee their processes. Any problems experienced by our associated third parties, including those resulting from breakdowns or other disruptions in the services provided by such parties or cyber-attacks and security breaches, could adversely affect our ability to conduct our business and our financial condition.

We could also be subject to liability for claims relating to the loss or misuse of personal information, such as violation of data privacy laws. We cannot provide assurance that the contractual requirements related to security and privacy that we impose on our service providers who have access to our data, including customer information, will be followed or will be adequate to prevent the unauthorized use or disclosure of such data. Any failure to adequately enforce or provide these protective measures or to prevent unauthorized access to our data, including customer information could result in liability, loss of business, protracted and costly litigation, governmental intervention, fines and damage to our reputation.

Risks related to our common stock

Our stock price and volume may be volatile, and purchasers of our securities could incur substantial losses.

The trading price and volume of our common stock, traded on the NASDAQ Capital Market ("NASDAQ"), has been, and may in the future be, volatile. For example, in the year ended December 31, 2023, the highest intra-day sale price of our common stock on NASDAQ was $26.89 per share and the lowest intra-day sale price of our common stock on NASDAQ

was $8.92 per share. Our highest trading day volume was 2,242,100 shares traded and the lowest trading day volume was 138,500 shares traded. We may continue to incur substantial increases or decreases in our stock price and volume in the foreseeable future.

Our stock price and trading volume and the market prices and trading volume of many publicly traded companies, including companies in the life sciences industry, have been, and can be expected to be, highly volatile. The future market price and trading volume of our common stock could be significantly impacted by numerous factors, including, but not limited to:

- Future sales of our common stock or other capital raising events by us;
- Sales of our common stock by existing shareholders;
- Changes in our capital structure, including stock splits or reverse stock splits;
- Changes in our product offerings and business structure through acquisitions or divestitures;
- Announcements of technological innovations for new commercial products by our present or potential competitors;
- Developments concerning proprietary rights;
- Adverse results in our field or with clinical tests of our products in customer applications;
- Adverse litigation;
- Unfavorable legislation or regulatory decisions;
- Public concerns regarding our products;
- Variations in quarterly operating results;
- General trends in the health care industry;
- Global viruses, epidemics, and pandemics, including COVID-19; and
- Other factors outside of our control, including significant market fluctuations.

In addition, sales of a substantial number of shares of our common stock or other securities in the public markets (including an issuance by us of additional securities in a public offering or private placement), or the perception that these sales may occur, could cause the market price of our common stock or other securities to decline and could materially impair our ability to raise capital through the sale of additional securities. The sale of a large number of shares of our common stock or other securities also might make it more difficult for us to sell equity or equity-related securities in the future at a time and at the prices that we deem appropriate

A significant percentage of our outstanding common stock is held by one stockholder, and this stockholder therefore has significant influence on us and our corporate actions.

As of December 31, 2023, based on our review of public filings and the Company's records, one of our existing stockholders, Casdin Capital, LLC ("Casdin"), owned 8,707,165 shares of our common stock, representing 19.3% of the issued and outstanding shares of common stock. Accordingly, this stockholder has had, and will continue to have, significant influence in determining the outcome of any corporate transaction or other matter submitted to our stockholders for approval, including mergers, consolidations and the sale of all or substantially all our assets, election of directors and other significant corporate actions. In addition, without the consent of this stockholder where a stockholder vote may be necessary, we could be prevented from entering into transactions that could be beneficial to us.

We do not anticipate declaring any cash dividends on our common stock.

We have never declared or paid cash dividends on our common stock and do not plan to pay any cash dividends in the near future. Our current policy is to retain all funds and earnings for use in the operation and expansion of our business.

Anti-takeover provisions in our Amended and Restated Certificate of Incorporation and Amended and Restated Bylaws and under Delaware law could make an acquisition of us, which may be beneficial to our stockholders, more difficult and may prevent attempts by our stockholders to replace or remove our current management and limit the market price of our common stock.

Provisions in our Amended and Restated Certificate of Incorporation and Amended and Restated Bylaws may have the effect of delaying or preventing a change of control or changes in our management, including provisions that:

- authorize our board of directors to issue, without further action by the stockholders, undesignated preferred stock;

- allow stockholders to require us to call a special meeting of stockholders upon written request of the holders of 35% of the outstanding shares entitled to vote thereat;
- establish an advance notice procedure for stockholder nominations;
- provide that vacancies on our board of directors may be filled only by a majority of directors then in office, even though less than a quorum; and
- specify that no stockholder is permitted to cumulate votes at any election of directors.

These provisions may frustrate or prevent any attempts by our stockholders to replace or remove our current management by making it more difficult for stockholders to replace members of our board of directors, which is responsible for appointing the members of our management. In addition, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the Delaware General Corporation Law, which limits the ability of stockholders owning in excess of 15% of our outstanding voting stock to merge or combine with us.

Risks related to accounting matters

Our ability to use net operating loss and tax credit carryforwards and certain built-in losses to reduce future tax payments is limited by provisions of the Internal Revenue Code, and it is possible that certain transactions or a combination of certain transactions may result in material additional limitations on our ability to use our net operating loss and tax credit carryforwards.

Section 382 and 383 of the Internal Revenue Code of 1986, as amended, contain rules that limit the ability of a company that undergoes an ownership change, which is generally any change in ownership of more than 50% of its stock over a three-year period, to utilize its net operating loss and tax credit carryforwards and certain built-in losses recognized in years after the ownership change. These rules generally operate by focusing on ownership changes involving stockholders owning directly or indirectly 5% or more of the stock of a company and any change in ownership arising from a new issuance of stock by the company. Generally, if an ownership change occurs, the yearly taxable income limitation on the use of net operating loss and tax credit carryforwards and certain built-in losses is equal to the product of the applicable long-term, tax-exempt rate and the value of the company's stock immediately before the ownership change. We may be unable to offset our taxable income with losses, or our tax liability with credits, before such losses and credits expire and therefore would incur larger federal income tax liability.

We have identified material weaknesses in our internal control over financial reporting, and if our remediation of such material weaknesses is not effective, or if we are unable to develop and maintain an effective system of internal control over financial reporting or disclosure controls and procedures, we may not be able to accurately and timely report financial results or prevent fraud, and our ability to meet our reporting obligations and the trading price of our common stock could be negatively affected.

As described in Item 9A — Controls and Procedures and elsewhere in this Form 10-K, Management identified material weaknesses in our internal control over financial reporting for the fiscal years ended December 31, 2023 and 2022. Effective internal control over financial reporting is necessary to provide reliable financial reports and to assist in the effective prevention of fraud. Any inability to provide reliable financial reports or prevent fraud could harm our business. We regularly review and update our system of internal control over financial reporting, disclosure controls and procedures, and corporate governance policies. In addition, we are required under the Sarbanes-Oxley Act of 2002 to report annually on our internal control over financial reporting. Any system of internal controls, however well designed and operated, is based in part on certain assumptions and can provide only reasonable, not absolute, assurances that the objectives of the system are met. A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of our annual or interim financial statements will not be prevented or detected on a timely basis. Accordingly, a material weakness increases the risk that the financial information we report contains material errors.

In the course of making our assessment of the effectiveness of internal control over financial reporting as of December 31, 2023, we identified several material weaknesses. Material weaknesses were identified in relation to (i) ineffective control environment attributed to the acquisition of six private companies in 2019 – 2021 without the proper internal control infrastructure in place, insufficient resources with the appropriate level of internal controls training, knowledge, and expertise to meet our financial reporting requirements and provide adequate oversight over the performance of internal controls, and turnover in the first half of 2023 in key positions, resulting in a delay in establishing control activities to effectively mitigate the risks; (ii) internal control procedures over certain financial statement areas; and (iii) change management controls over certain key financial systems.

In the course of making our assessment of the effectiveness of internal control over financial reporting as of December 31, 2022, we identified several material weaknesses. Material weaknesses were identified in relation to (i) inappropriately designed entity-level controls impacting the control environment, risk assessment, and monitoring activities to prevent or detect material misstatements to the consolidated financial statements attributed to an insufficient number of qualified resources and inadequate oversight and accountability over the performance of controls, ineffective identification and assessment or risks impacting internal control over financial reporting, and ineffective monitoring controls; (ii) information system logical access within certain key financial systems; (iii) accounting policies and procedures and related controls over certain financial statement areas; (iv) inadequate risk assessment, accounting policies, procedures, and related controls performed over the recognition and measurement of indirect tax liabilities.

The aforementioned material weaknesses did not result in any identified material misstatements to our financial statements, and there were only immaterial changes to previously released financial results.

To address our material weaknesses, we have developed and begun to implement the remediation plans described in Item 9A — Controls and Procedures and elsewhere in this Form 10-K. However, elements of our remediation plans can only be accomplished over time and we can offer no assurance that these initiatives will ultimately have the intended effects. Any failure to establish and maintain effective internal control over financial reporting and disclosure controls and procedures could adversely impact our ability to report our financial results on a timely and accurate basis. If our financial statements are not accurate, investors may not have a complete understanding of our operations or may lose confidence in our reported financial information. Likewise, if our financial statements are not filed on a timely basis as required by the SEC and The NASDAQ Stock Market LLC, we could face severe consequences from those authorities. In either case, it could result in a material adverse effect on our business or have a negative effect on the trading price of our common stock. Further, if we fail to remedy these deficiencies (or any other future deficiencies) or maintain the adequacy of our internal control over financial reporting and disclosure controls and procedures, we could be subject to regulatory scrutiny, civil or criminal penalties or shareholder litigation. We can give no assurance that the measures we have taken and plan to take in the future will remediate the material weaknesses identified or that any additional material weaknesses or restatements of our financial statements will not arise in the future due to a failure to implement and maintain adequate internal control over financial reporting or disclosure controls and procedures.

Further, in the future, if we cannot conclude that we have effective internal control over financial reporting or disclosure controls and procedures, or if our independent registered public accounting firm is unable to provide an unqualified opinion regarding the effectiveness of our internal control over financial reporting, investors could lose confidence in the reliability of our financial statements, which could lead to a decline in our stock price. Failure to comply with reporting requirements could also subject us to sanctions and/or investigations by the SEC, The NASDAQ Stock Market LLC or other regulatory authorities.

Risks related to disruptive events

Public health crises, such as the COVID-19 pandemic, have adversely affected, and could in the future adversely affect, our business, financial condition. results of operations and cash flows.

We are subject to risks associated with public heath crises, including those related to the COVID-19 global pandemic. The COVID-19 pandemic has created significant volatility, uncertainty, and economic disruption, which has had, and may continue to have, an adverse effect our business operations, results of operations, cash flows and financial condition. Other future public health crises may also have a negative impact on our business.

In particular, the financial or operational impacts as a result of COVID-19 or other future public health crises have included, and may in the future include:

- The temporary closure of our manufacturing facilities and/or those of our outside manufacturers;
- Unavailability of supplies and other components for our products, including difficulties in obtaining sheet metal and electrical components incorporating semiconductor chips for the manufacture of our UL freezer products, which have largely abated during the year ended December 31, 2023;
- Costs associated with protecting the health of our employees and adhering to any guidance or orders of various governmental authorities, such masking, testing, and social distancing requirements;
- Risks associated with remote work, including increased cybersecurity risk;
- Widespread staffing shortages;

- Outbreaks of disease in our facilities or those of our third-party service providers, which could require us or them to temporarily shut down business operations or cause a disruption to, or shortage in, our or their workforce;
- Significant volatility or reductions in demand for our products;
- Delays in shipments of our products, which could harm our customer relations and adversely impact our competitive position and sales;
- Restrictions on the ability of our personnel to access customers;
- Challenges to our capacity to manufacture, sell and support the use of our products; and
- Volatility in credit or financial markets.

The extent to which public health crises, including health epidemics and other outbreaks, such as COVID-19, impacts our business or results will depend on future developments, which are highly uncertain and cannot be predicted, including new information which may emerge concerning the severity of a particular virus and its variants and the actions to contain it or treat its impact, among others. Such impacts of the COVID-19 pandemic include, among others, the extent of harm to public health, including the duration of the pandemic, any potential subsequent waves of COVID-19 infection, the emergence of new variants of COVID-19, some of which may be more transmissible or virulent than the initial strain, and the availability and distribution of effective vaccines and medical treatments, further disruption to the manufacturing of and demand for our products, our ability to effectively manage inventory levels and adjust our production schedules to align with demand, impairments and other charges, the impact of the global business and economic environment on liquidity and the availability of capital, the costs incurred to keep our employees safe while maintaining continued operations, and our ability to effectively motivate and retain the necessary workforce. Even after the COVID-19 pandemic has subsided, we may continue to experience impacts to our business as a result of its global economic impact. In addition, we cannot at this time quantify or forecast the potential business impact of any future public health crisis. To the extent the COVID-19 pandemic or other public health crisis adversely affects our business, results of operations or financial condition, many of the other risks described in this "Risk Factors" section may also be heightened.

Natural disasters, geopolitical unrest, war, terrorism, public health issues or other catastrophic events could disrupt the supply, delivery or demand of products, which could negatively affect our operations and performance.

We are subject to the risk of disruption by earthquakes, floods and other natural disasters, fire, power shortages, geopolitical unrest, war, terrorist attacks and other hostile acts, public health issues, epidemics or pandemics and other events beyond our control and the control of the third parties on which we depend. Any of these catastrophic events, whether in the United States or abroad, may have a strong negative impact on the global economy, our employees, facilities, partners, suppliers, distributors or customers, and could decrease demand for our products, create delays and inefficiencies in our supply chain and make it difficult or impossible for us to deliver products to our customers. A catastrophic event that results in the destruction or disruption of our data centers or our critical business or information technology systems would severely affect our ability to conduct normal business operations and, as a result, our operating results would be adversely affected.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 1C. CYBERSECURITY

We have a thorough process for identifying, assessing, and managing cybersecurity risks within our broader risk management framework. We gather insights from external experts and internal threat intelligence teams for our cybersecurity risk management program. A dedicated team oversees cybersecurity risk management, led by professionals with deep expertise, including our Vice President, Cybersecurity and Information Security Officer. Our executive leadership, supported by our cybersecurity team, oversees our enterprise risk management and regularly considers cybersecurity and other material risks.

Within our cybersecurity risk management system, our incident management team tracks and logs privacy and security incidents across the Company and third-party service providers. Significant incidents undergo review by a cross-functional group, with immediate escalation for potentially material incidents. We consult with outside counsel as needed, with final decisions made by senior management.

The Audit Committee oversees cybersecurity risks and incidents, ensuring compliance with disclosure requirements and cooperation with law enforcement. Senior management regularly updates the committee on cyber risks and any material incidents.

While our business strategy and financial condition have not been materially affected by cybersecurity risks, we cannot guarantee future immunity. For more details, refer to Item 1A Risk Factors in our Annual Report on Form 10-K.

ITEM 2. PROPERTIES

Our material office and manufacturing leases are detailed below:

Location	Square Feet	Principal Use	Lease Expiration
Bothell, WA	45,522	Corporate headquarters, manufacturing, research and development, marketing, and administrative offices	July 2031
Woodinville, WA	13,578	Warehouse	January 2030
Albuquerque, NM	2,940	Research and development and administrative offices	April 2027
Bruce Township, MI	106,998	Manufacturing, research and development, and administrative offices	Month to Month
Athens, OH	50,000	Manufacturing, research and development, and administrative offices	March 2028
Nelsonville, OH	24,114	Warehouse	June 2024
Columbus, OH	1,807	Administrative offices	January 2025
Indianapolis, IN	11,415	Manufacturing, research and development, and administrative offices	September 2024
United States	12,500	Biological and pharmaceutical specimen storage	January 2027
United States	26,600	Biological and pharmaceutical specimen storage	March 2024
United States	16,153	Biological and pharmaceutical specimen storage	June 2024
United States	16,800	Biological and pharmaceutical specimen storage	February 2026
United States	26,800	Biological and pharmaceutical specimen storage	November 2031
Netherlands	47,533	Biological and pharmaceutical specimen storage	March 2026

We consider the facilities to be in a condition suitable for their current uses. Because of anticipated growth in the business and due to the increasing requirements of customers or regulatory agencies, we may need to acquire additional space or upgrade and enhance existing space. We believe that adequate facilities will be available upon the conclusion of our leases.

ITEM 3. LEGAL PROCEEDINGS

From time to time, we may be subject to legal proceedings and claims in the ordinary course of business. We are not currently aware of any such proceedings or claims that we believe will have, individually or in the aggregate, a material adverse effect on our business, financial condition or results of operations.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

PART II

ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Market information for common stock

Our common stock is traded on the NASDAQ Stock Market under the trading symbol "BLFS."

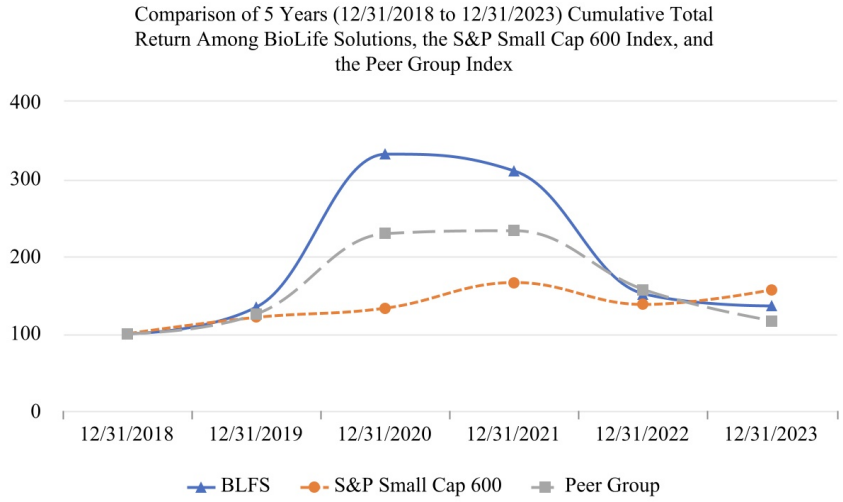
Stockholders and dividends

As of February 22, 2024, there were approximately 256 holders of record of our common stock. We have never paid cash dividends on our common stock and do not anticipate that any cash dividends will be paid in the foreseeable future. We anticipate that we will retain all earnings, if any, to support our operations. Any future determination as to the payment of dividends will be at the sole discretion of our Board of Directors and will depend on our financial condition, results of operations, capital requirements and other factors our Board of Directors deems relevant.

Performance graph

The following information is not deemed to be "soliciting material" or to be "filed" with the SEC or subject to Regulation 14A under the Exchange Act, or to the liabilities of Section 18 of the Exchange Act, and will not be deemed to be incorporated by reference into any filing under the Securities Act or the Exchange Act, except to the extent we specifically incorporate it by reference into such a filing.

The following graph shows the cumulative total stockholder return on our common stock with the cumulative total return of the S&P Small Cap 600 Index and our peer group, assuming an initial investment of $100 on December 31, 2018 and the reinvestment of all dividends.



Issuer repurchases of equity securities

Not applicable.

ITEM 6. RESERVED

Reserved.

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

Company Overview

We are a life sciences company that develops, manufactures and supplies bioproduction tools and services which are designed to improve quality and de-risk biologic manufacturing, storage, distribution, and transportation in the cell and gene therapy industry and broader biopharma market. Our products are used in basic and applied research and commercial manufacturing of biologic-based therapies. Customers use our products to maintain the health and function of biologic material during sourcing, manufacturing, storage, and distribution.

Our current portfolio of bioproduction tools and services are comprised of three revenue lines that contain seven main offerings: (i) cell processing (including biopreservation media for the preservation of cells and tissues, human platelet lysate media for the supplementation of cell expansion, cryogenic vials and automated fill machines that provide high-quality, efficient, and precise mixes of solutions), (ii) freezers and thaw systems (including a full line of mechanical ultra-low temperature ("ULT"), isothermal, and liquid nitrogen freezers and accessories, automated thaw devices which provide controlled, consistent thawing of frozen biologics in vials and cryobags), and (iii) Biostorage services (including biological and pharmaceutical storage services and transport, and "smart", cloud connected devices for transporting biologic payloads).

We currently operate as one bioproduction tools and services business which supports several steps in the biologic material manufacturing and delivery process. We have a diversified portfolio of tools and services that focus on biopreservation, cell processing, frozen biologic storage products and services, cold-chain transportation, and thawing of biologic materials. We have in-house expertise in cryobiology and continue to capitalize on opportunities to maximize the value of our product platform for our extensive customer base through both organic growth innovations and acquisitions.

Subsequent to the second quarter of 2023, we began to seek divestment of our Freezer Business from our current product portfolio. For additional information regarding our ongoing initiative to divest the Freezer Business, see "Item 1A. Risk Factors" of this Annual Report for additional details.

Segment reporting

Management views the Company's operations and makes decisions regarding how to allocate resources as one reportable segment and one reporting unit.

Critical accounting policies and estimates

We have identified the policies and estimates below as being critical to our business operations and the understanding of our results of operations. These policies require management's most difficult, subjective, or complex judgements, often as a result of the need to make estimates about the effect of matters that are inherently uncertain. The impact of any associated risks related to these policies on our business operations are discussed throughout "Management's Discussion and Analysis of Financial Condition," including in the "Results of Operations" section, where such policies affect our reported and expected financial results. Although we believe that our estimates, assumptions, and judgements are reasonable, they are based upon information presently available. Actual results may differ significantly from these estimates under different assumptions, judgments, or conditions.

Revenue recognition

To determine revenue recognition for contractual arrangements that we determine are within the scope of Financial Accounting Standards Board ("FASB") Topic 606, *Revenue from Contracts with Customers*, we perform the following five steps: (i) identify each contract with a customer; (ii) identify the performance obligations in the contract; (iii) determine the transaction price; (iv) allocate the transaction price to our performance obligations in the contract; and (v) recognize revenue when (or as) we satisfy the relevant performance obligation. We only apply the five-step model to contracts when it is probable that we will collect the consideration we are entitled to in exchange for the goods or services we transfer to the customer. Contracts with customers may contain multiple performance obligations. For such arrangements, the transaction price is allocated to each performance obligation based on the estimated relative standalone selling prices of the promised products or services underlying each performance obligation. The Company determines standalone selling prices based on the price at which the performance obligation is sold separately. If the standalone selling price is not observable through past transactions, the Company estimates the standalone selling price, taking into account available information such as market conditions and internally approved pricing guidelines related to the performance obligations. Payment terms and conditions vary, although terms generally include a requirement of payment within 30 to 90 days.

The Company primarily recognizes product revenues, service revenues, and rental revenues. Product revenues are generated from the sale of biopreservation media, ThawSTAR, and freezer products. We recognize product revenue,

including shipping and handling charges billed to customers, when we transfer control of our products to our customers. Shipping and handling costs are classified as part of cost of product revenue in the Consolidated Statement of Operations. Service revenues are generated from the storage of biological and pharmaceutical materials. We recognize service revenues over time as services are performed or ratably over the contract term. To the extent the transaction price includes variable consideration, the Company estimates the amount of variable consideration that should be included in the transaction price utilizing the expected value method or the most likely amount method, depending on the facts and circumstances relative to the contract. When determining the transaction price of a contract, an adjustment is made if payment from a customer occurs either significantly before or significantly after performance, resulting in a significant financing component. Applying the practical expedient in paragraph 606-10-32-18, the Company does not assess whether a significant financing component exists if the period between when the Company performs its obligations under the contract and when the customer pays is one year or less. None of the Company's contracts contained a significant financing component or variable consideration as of and during the years ended December 31, 2023, 2022, and 2021.

The Company also generates revenue from the leasing of our property and equipment, operating right-of-use assets, and evo cold chain systems to customers pursuant to service contracts or rental arrangements entered into with the customer. Revenue from these arrangements is not within the scope of FASB ASC Topic 606 as it is within the scope of FASB ASC Topic 842, *Leases*. All customers leasing shippers currently do so under month-to-month rental arrangements. We account for these rental transactions as operating leases and record rental revenue on a straight-line basis over the rental term.

Business combinations

Amounts paid for acquisitions are allocated to the tangible and intangible assets acquired and liabilities assumed, if any, based on their fair values at the dates of acquisition. This purchase price allocation process requires management to make significant estimates and assumptions with respect to intangible assets and deferred revenue obligations. The fair value of identifiable intangible assets is based on detailed valuations that use information and assumptions determined by management. Any excess of purchase price over the fair value of the net tangible and intangible assets acquired is allocated to goodwill. While we use our best estimates and assumptions to accurately value assets acquired and liabilities assumed at the acquisition date as well as any contingent consideration, where applicable, our estimates are inherently uncertain and subject to refinement. As a result, during the measurement period, which may be up to one year from the acquisition date, we record adjustments to the assets acquired and liabilities assumed with the corresponding offset to goodwill. Upon conclusion of the measurement period or final determination of the values of assets acquired or liabilities assumed, whichever comes first, any subsequent adjustments are recorded to our Consolidated Statements of Operations. The fair value of contingent consideration includes estimates and judgments made by management regarding the probability that future contingent payments will be made, the extent of royalties to be earned in excess of the defined minimum royalties, etc. Management updates these estimates and the related fair value of contingent consideration at each reporting period based on the estimated probability of achieving the earnout targets and applying a discount rate that captures the risk associated with the expected contingent payments. To the extent our estimates change in the future regarding the likelihood of achieving these targets we may need to record material adjustments to our accrued contingent consideration. Changes in the fair value of contingent consideration are recorded in our Consolidated Statements of Operations. We use the income approach to determine the fair value of certain identifiable intangible assets including customer relationships and developed technology. This approach determines fair value by estimating after-tax cash flows attributable to these assets over their respective useful lives and then discounting these after-tax cash flows back to a present value. We base our assumptions on estimates of future cash flows, expected growth rates, expected trends in technology, etc. We base the discount rates used to arrive at a present value as of the date of acquisition on the time value of money and certain industry-specific risk factors. We believe the estimated purchased customer relationships, developed technologies, trademarks, tradenames, and patents amounts so determined represent the fair value at the date of acquisition and do not exceed the amount a third party would pay for the assets.

Intangible assets and goodwill

Intangible assets

Intangible assets with a definite life are amortized over their estimated useful lives using the straight-line method and the amortization expense is recorded within intangible asset amortization in the Consolidated Statements of Operations. If the estimate of a definite-lived intangible asset's remaining useful life is changed, the remaining carrying amount of the intangible asset is amortized prospectively over the revised remaining useful life. Definite-lived intangible assets and their related estimated useful lives are reviewed at least annually to determine if any adverse conditions exist that would indicate the carrying value of these assets may not be recoverable.

Indefinite-lived intangibles are carried at the initially recorded fair value less any recognized impairment. Indefinite-lived intangibles are tested annually for impairment. Impairment assessments are conducted more frequently if certain conditions exist, including a change in the competitive landscape, any internal decisions to pursue new or different technology strategies, a loss of a significant customer, or a significant change in the marketplace, including changes in the prices paid for the Company's products or changes in the size of the market for the Company's products. If impairment indicators are present, the Company determines whether the underlying intangible asset is recoverable through estimated future undiscounted cash flows. If the asset is not found to be recoverable, it is written down to the estimated fair value of the asset based on the sum of the future discounted cash flows expected to result from the use and disposition of the asset.

Goodwill

We test goodwill for impairment on an annual basis, and between annual tests if events and circumstances indicate it is more likely than not that the fair value of our goodwill is less than its carrying value. Events that would indicate impairment and trigger an interim impairment assessment include, but are not limited to, current economic and market conditions, including a decline in the Company's market capitalization, a significant adverse change in legal factors, business climate or operational performance of the business, and an adverse action or assessment by a regulator. Goodwill is tested for impairment in the fourth quarter of each year, or more frequently as warranted by events or changes in circumstances mentioned above. Accounting guidance also permits an optional qualitative assessment for goodwill to determine whether it is more likely than not that the carrying value of a reporting unit exceeds its fair value. If, after this qualitative assessment, we determine that it is not more likely than not that the fair value of a reporting unit is less than its carrying amount, then no further quantitative testing would be necessary. A quantitative assessment is performed if the qualitative assessment results in a more likely than not determination or if a qualitative assessment is not performed. The quantitative assessment considers whether the carrying amount of a reporting unit exceeds its fair value, in which case an impairment charge is recorded to the extent the reporting unit's carrying value exceeds its fair value. The Company operates as one reporting unit as of the goodwill impairment measurement date in the fourth quarter of 2023.

Warranty guarantees

Our freezer and thaw and certain cell processing products are warranted to provide assurance that the product will function as expected and to ensure customer confidence in design and overall quality. Warranty coverage on our products is generally provided for specified periods of time and on select products' hours of usage, and generally covers parts, labor, and other expenses for non-maintenance repairs. Warranty coverage generally does not cover operator abuse or improper use.

At the time of sale, we recognize expense and record a warranty accrual by product line for estimated costs in connection with forecasted future warranty claims. Our estimate of the cost of future warranty claims is based primarily on the estimated number of products under warranty, historical average costs incurred to service warranty claims, the trend in the historical ratio of warranty claims for each part covered, and the historical length of time between the sale and resulting warranty claim. If applicable, historical claims experience may be adjusted for known product design improvements or for the impact of unusual product quality issues. We periodically assess the adequacy of our warranty accruals based on changes in our estimates and assumptions and record any necessary adjustments if the cost of actual claim experience differs from our estimate and indicates that adjustments to our warranty accrual are necessary. Factors that could have an impact on actual future claims and our warranty accrual include, but are not limited to, items such as performance of new products; product failure rates; factors impacting product usage, such as changes in sales volumes and shifts in product mix; manufacturing quality and product design issues, including significant manufacturing or design defects not discovered until after the product is delivered to customers; higher or lower than expected service and component part costs to satisfactorily address the repair, and, if applicable, changes to the warranty coverage periods. Additionally, from time to time, we also establish warranty accruals for our estimate of the costs necessary to settle major rework campaigns on a product-specific basis during the period in which the circumstances giving rise to the major rework campaign become known and when the costs to satisfactorily address the situation are both probable and estimable. The warranty accrual for the cost of a major rework campaign is primarily based on an estimate of the cost to repair each affected unit and the number of affected units expected to be repaired.

We believe that our analysis of historical warranty claim trends and knowledge of potential manufacturing and/or product design improvements or issues provide sufficient information to establish a reasonable estimate for the cost of future warranty claims at the time of sale and our warranty accruals as of the date of our Consolidated Balance Sheets. We believe that our $7.9 million warranty accrual as of December 31, 2023 is adequate and historically has been adequate; however, due to the inherent uncertainty in the accrual estimation process, including forecasting future warranty claims, costs

associated with servicing future warranty claims, and unexpected major rework campaigns that may arise in the future, our actual warranty costs incurred may differ from our warranty accrual estimate. An unexpected increase in warranty claims and/or in the costs associated with servicing those claims would result in an increase in our warranty accruals and a decrease in our net earnings.

Contingent consideration

We estimate the acquisition date fair value of the acquisition-related contingent consideration using various valuation approaches, including option pricing models and Monte Carlo simulations, as well as significant unobservable inputs, reflecting the Company's assessment of the assumptions market participants would use to value these liabilities. The fair value of the contingent consideration is remeasured each reporting period, with any change in the value recorded in our Consolidated Statements of Operations as change in fair value of contingent consideration.

During the year ended December 31, 2023, all contingent consideration liabilities were written off upon assessment of the probability we would achieve certain revenue targets for earnouts. For additional details on the factors considered in the write-off, see Note 3: *Fair value measurement* within the consolidated financial statements in Part II, Item 8 of this Annual Report.

Stock-based compensation

We measure and record compensation expense using the applicable accounting guidance for share-based payments related to stock options, time-based restricted stock, market-based restricted stock awards and performance-based awards granted to our directors and employees. The fair value of market-based restricted stock awards is estimated at the date of grant using the Monte Carlo Simulation model. The Monte Carlo Simulation valuation model incorporates assumptions as to stock price volatility, the expected life of options or awards, a risk-free interest rate and dividend yield. In valuing our market-based stock awards, significant judgment is required in determining the expected volatility of our common stock. Expected volatility for our market-based restricted stock awards is based on the historical volatility of our own stock and the stock of companies within our defined peer group. Further, our expected volatility may change in the future, which could substantially change the grant-date fair value of future awards and, ultimately, the expense we record. The fair value of restricted stock, including performance awards, without a market condition is estimated using the current market price of our common stock on the date of grant.

We expense stock-based compensation for stock options, restricted stock awards, and performance awards over the requisite service period. For awards with only a service condition, we expense stock-based compensation using the straight-line method over the requisite service period for the entire award. For awards with a market condition, we expense over the vesting period regardless of the value that the award recipients will ultimately receive.

Provision for income taxes

The assessment regarding whether a valuation allowance is required considers both positive and negative evidence when determining whether it is more likely than not that deferred tax assets are recoverable. In making this assessment, significant weight is given to evidence that can be objectively verified. In its evaluation, the Company considered its cumulative loss and its forecasted losses in the near-term as significant negative evidence. Based upon a review of the four sources of income identified within ASC 740, *Accounting for Income Taxes*, the Company determined that the Company's recorded deferred tax liabilities as of December 31, 2023 would be a sufficient source of taxable income to realize all of its deferred tax assets except for a portion of its net operating loss carryforwards. As a result, a full valuation allowance on its deferred tax assets was recorded as of December 31, 2023. The Company will continue to assess the realizability of its assets going forward and will adjust the valuation allowance as needed.

The Company determines its uncertain tax positions based on a determination of whether and how much of a tax benefit taken by the Company in its tax filings or positions is more likely than not to be sustained upon examination by the relevant income tax authorities. The Company is generally subject to examination by U.S. federal and local income tax authorities for all tax years in which loss carryforward is available.

The Company applies judgment in the determination of the financial statement recognition and measurement of tax positions taken or expected to be taken in a tax return. As of December 31, 2023, the Company has an unrecognized tax benefit of $2.2 million related to tax attributes being carried forward. The Company is generally subject to examination by U.S. federal and local income tax authorities for all tax years in which loss carryforward is available.

As of December 31, 2023, the Company had U.S. federal net operating loss ("NOL") carryforwards of approximately $151.9 million, which is available to reduce future taxable income. Approximately $39.2 million of NOL will expire from 2024 through 2037, and approximately $112.7 million of NOL will be carried forward indefinitely. The NOL carryforwards are subject to an annual limitation in the event of certain cumulative changes in the ownership interest. This limits the amount of tax attributes that can be utilized annually to offset future taxable income or tax liabilities. Subsequent ownership changes may further affect the limitation in future years.

Recent accounting standards update

See Note 1: *Organization and significant accounting policies – recent accounting pronouncements*, within the consolidated financial statements in Part II, Item 8 of this Annual Report for more information.

Discussions of 2021 results and year-to-year comparisons between 2022 and 2021 that are omitted in this Annual Report on Form 10-K can be found in "Management's Discussion and Analysis of Financial Condition and Results of Operations" in Part II, Item 7 of our Annual Report on Form 10-K for the year ended December 31, 2022, filed with the SEC on March 31, 2023.

Results of operations

The following discussion of the financial condition and results of operations should be read in conjunction with the accompanying Consolidated Financial Statements and the related footnotes thereto.

Revenue

Revenue for years ended December 31, 2023, 2022, and 2021 were comprised of the following:

	Year Ended December 31,			2023 vs. 2022		2022 vs. 2021	
(In thousands, except percentages)	**2023**	**2022**	**2021[1]**	**$ Change**	**% Change**	**$ Change**	**% Change**
Product revenue							
Freezer and thaw	$ 50,622	$ 66,682	$ 56,620	$ (16,060)	(24 %)	$ 10,062	18 %
Cell processing	65,772	68,509	44,965	(2,737)	(4 %)	23,544	52 %
Biostorage services	1,301	809	328	492	61 %	481	147 %
Service revenue							
Freezer and thaw	1,024	74	—	950	1284 %	74	— %
Biostorage services	16,527	15,234	9,817	1,293	8 %	5,417	55 %
Rental revenue							
Biostorage services	8,025	10,451	7,426	(2,426)	(23 %)	3,025	41 %
Total revenue	$ 143,271	$ 161,759	$ 119,156	$ (18,488)	(11 %)	$ 42,603	36 %

(1) 2021 revenue includes product revenue related to Global Cooling from May 3, 2021 through December 31, 2021 and product revenue related to Sexton from September 1, 2021 through December 31, 2021.

Total Revenue decline in the year ended December 31, 2023, as compared to the year ended December 31, 2022, was driven primarily by reduced purchases of ultra-low temperature and LN2 freezers. The Company has seen a decrease in customer purchases of these products as customers have reacted to preserve cash and abstain from acquiring inventory due to increased interest rates across the broader CGT market. Customers also reevaluated safety stock levels in the year ended December 31, 2023 for cell processing products, causing revenue levels to fall approximately 4% from the year ended December 31, 2022.

Revenue concentrations with one customer decreased to 16% in the year ended December 31, 2023 from 18% from the same customer in the year ended December 31, 2022. This concentration remained relatively consistent despite significant changes in product mix, as the customer's reduction in demand for capital purchases was less pronounced than others in 2023.

Revenue is impacted by the relatively high degree of customer concentration, the timing of orders, the development efforts of our customers or end-users and regulatory approvals for biologics that incorporate our products, which may result in significant quarterly fluctuations. Such fluctuations are expected, but they may not be predictive of future revenue or otherwise indicative of a trend.

Costs and operating expenses

Total costs and operating expenses for years ended December 31, 2023, 2022, and 2021 were comprised of the following:

	Year Ended December 31,			2023 vs. 2022		2022 vs. 2021	
(In thousands, except percentages)	**2023**	**2022**	**2021**	**$ Change**	**% Change**	**$ Change**	**% Change**
Cost of product, rental, and service revenue	$ 96,519	$ 107,937	$ 82,108	$ (11,418)	(11 %)	$ 25,829	31 %
General and administrative	55,725	47,670	33,668	8,055	17 %	14,002	42 %
Sales and marketing	24,583	21,570	14,006	3,013	14 %	7,564	54 %
Research and development	18,796	14,798	11,821	3,998	27 %	2,977	25 %
Asset impairment charges	15,485	110,364	—	(94,879)	(86 %)	110,364	- %
Intangible asset amortization	5,181	9,697	8,202	(4,516)	(47 %)	1,495	18 %
Acquisition costs	—	18	1,636	(18)	(100) %	(1,618)	(99 %)
Change in fair value of contingent consideration	(2,193)	(4,754)	2,875	2,561	(54) %	(7,629)	(265 %)
Total operating expenses	$ 214,096	$ 307,300	$ 154,316	$ (93,204)	(30 %)	$ 152,984	99 %

Cost of product, rental, and service revenue

In the year ended December 31, 2023, cost of product, rental, and service revenue decreased $11.4 million, or 11%, from the year ended December 31, 2022. This decrease was primarily driven by decreased sales compared to the prior year. We expect the cost of product, rental, and service revenue to fluctuate in future quarters based on production volumes and product mix.

Cost of product, rental, and service revenue as a percentage of revenue was 69% and 70% for the years ended December 31, 2023 and 2022, respectively. Cost of product, rental, and service revenue in the years ended December 31, 2023 and 2022 includes zero and $251,000, respectively, in inventory step-up expense recorded in the purchase accounting of our Global Cooling, CBS, and AsteroBio Corporation (“Astero”) acquisitions.

General and administrative expenses

During the years ended December 31, 2023, 2022, and 2021, general and administrative (“G&A”) expense consisted primarily of personnel-related expenses, stock-based compensation, professional fees, such as accounting and consulting fees, and corporate insurance.

In the year ended December 31, 2023, G&A expenses increased by $8.1 million, or 17%, compared with the year ended December 31, 2022. Of this increase, $3.7 million, or 31%, was driven by increased consulting fees related to our strategic transaction on the Freezer Business. The remaining costs primarily relate to an increase of $1.4 million in severance related to the departure of the former CEO and other staff in addition to a reduction in headcount that occurred in the quarter ended September 30, 2023.

Sales and marketing expenses

During the years ended December 31, 2023, 2022, and 2021, sales and marketing expense (“S&M”) consisted primarily of personnel-related costs, stock based compensation, consulting, advertising, and travel expenses.

S&M expense increased $3.0 million in the year ended December 31, 2023, or 14%, compared with the year ended December 31, 2022. The increase is primarily due to $2.0 million of increased stock compensation and $0.7 million of increased advertising.

Research and development expenses

During the years ended December 31, 2023, 2022, and 2021, research and development ("R&D") expense consisted primarily of personnel-related costs, consulting, research supplies, and milestone expenses related to third party research agreements.

R&D expense increased $4.0 million in the year ended December 31, 2023, or 27%, compared with the year ended December 31, 2022. The increase is primarily due to $2.5 million of increased stock-based compensation expenses and $1.0 million of scrapped research materials related to an adjustment in the design of a future freezer product release that rendered certain components obsolete.

Asset impairment charges

Asset impairment charges in the year ended December 31, 2023 consist of the impairment incurred of $15.5 million during the quarter ended September 30, 2023. Asset impairment charges in the year ended December 31, 2022 consist of the impairments incurred of $69.9 million and $40.5 million during the quarter ended June 30, 2022 and impairment assessment date of October 1, 2022, respectively. These impairment charges impacted both definite and indefinite-lived intangible assets acquired during the acquisition of Global Cooling and Custom Biogenic Systems. See Note 2: *Impairment of property and equipment and definite-lived intangible assets* within the consolidated financial statements in Part II, Item 8 of this Annual Report for more information on the events and assessment leading to these non-cash impairment charges during the years ended December 31, 2023 and 2022.

Intangible asset amortization expense

Amortization expense consists of charges related to the amortization of intangible assets associated with the acquisitions of Global Cooling, Custom Biogenic Systems ("CBS"), SciSafe, Sexton, SAVSU Technologies, Inc. ("SAVSU"), and Astero in which we acquired definite-lived intangible assets.

Acquisition costs

Acquisition costs consist of legal, accounting, third-party valuations, and other due diligence costs related to our Global Cooling and Sexton acquisitions.

Change in fair value of contingent consideration

Change in fair value of contingent consideration consists of changes in estimated fair value of our potential earnouts related to our SciSafe and Custom Biogenic Systems acquisitions. The benefit recognized in the year ended December 31, 2023 relates primarily to changes in our estimated probability of achieving earnout targets set forth within the purchase agreements.

Other income and expenses

Total other income and expenses for the years ended December 31, 2023, 2022, and 2021 were comprised of the following:

	Year Ended December 31,			2023 vs. 2022		2022 vs. 2021	
(In thousands, except percentages)	**2023**	**2022**	**2021**	**$ Change**	**% Change**	**$ Change**	**% Change**
Change in fair value of warrant liability	$ —	$ —	$ (121)	$ —	— %	$ 121	(100) %
Change in fair value of investments	—	697	—	(697)	(100 %)	697	— %
Interest expense, net	(1,812)	(687)	(485)	(1,125)	164 %	(202)	42 %
Other income	1,264	704	289	560	80 %	415	144 %
Gain on settlement of Global Cooling escrow	5,115	—	—	5,115	— %	—	— %
Gain on acquisition of Sexton Biotechnologies, Inc.	—	—	6,451	—	— %	(6,451)	(100 %)
Total other income, net	$ 4,567	$ 714	$ 6,134	$ 3,853	540 %	$ (5,420)	(88 %)

Change in fair value of warrant liability.

Reflects the changes in fair value associated with the periodic "mark-to-market" valuation of certain warrants that were issued in 2014. See Note 1: *Organization and significant accounting policies,* "Certain Warrants which have Features that may Result in Cash Settlement" within the consolidated financial statements in Part II, Item 8 of this Annual Report for more information.

Change in fair value of investments.

Reflects fair value adjustments to our investment in iVexSol.

Interest expense, net.

Interest expense incurred in the year ended December 31, 2023 related primarily to the loan obtained in September 2022 and two loans that were assumed in the acquisition of Global Cooling. We also earn interest on cash held in our money market account. Increases in interest expenses during the year ended December 31, 2023 can also be attributed primarily to interest incurred on the Term Loan (as defined under Note 13: *Long-term debt* within the consolidated financial statements in Part II, Item 8 of this Annual Report) drawn in the quarter ended September 30, 2022.

Gain on settlement of Global Cooling escrow.

Reflects the non-cash gain associated with our post-closing adjustments for indemnifications and negotiated terms in connection with our acquisition of Global Cooling, and subsequent release and cancellation of these shares of our common stock from the third-party escrow account established in connection with that transaction. For additional information, see Note 12 within the consolidated financial statements in Part II, Item 8 of this Annual Report.

Gain on acquisition of Sexton Biotechnologies, Inc.

Reflects the non-cash gain associated with our investment in Sexton due to the step-acquisition of the remaining shares of Sexton and subsequent consolidation of Sexton in our financial statements.

Income Tax (Expense) Benefit

Income tax benefit for the years ended December 31, 2023, 2022, and 2021 was as follows:

	Year Ended December 31,			2023 vs. 2022		2022 vs. 2021	
(In thousands, except percentages)	**2023**	**2022**	**2021**	**$ Change**	**% Change**	**$ Change**	**% Change**
Income tax (expense) benefit	$ (169)	$ 5,022	$ 20,118	$ (5,191)	(103)%	$ (15,096)	(75 %)
Effective tax rate	— %	4 %	69 %				

The income tax benefit recognized in the year ended December 31, 2023 primarily related to losses generated in 2023. Our effective tax rate for 2023 was lower than the U.S. statutory rate of 21% primarily due to the change in our valuation allowance.

The income tax benefit recognized in the year ended December 31, 2022 primarily related to losses generated in 2022. Our effective tax rate for 2022 was lower than the U.S. statutory rate of 21% primarily due to our valuation allowance.

Liquidity and capital resources

We believe our cash, cash equivalents, restricted cash, cash generated from operations, available-for-sale securities, and credit lines will satisfy, for at least the next twelve months from the date of this filing, our liquidity requirements, both globally and domestically, including the following: working capital needs, capital expenditures, ongoing initiative for divestiture of the Freezer Business, contractual obligations, commitments, principal and interest payments on debt, and other liquidity requirements associated with our operations.

On December 31, 2023, we had $52.3 million in cash, cash equivalents, and available-for-sale securities, compared to $64.1 million as of December 31, 2022, as follows:

	Year Ended December 31,			2023 vs. 2022
(In thousands, except percentages)	**2023**	**2022**	**$ Change**	**% Change**
Cash and cash equivalents	$ 35,407	$ 19,442	$ 15,965	82 %
Restricted cash	31	31	—	— %
Available-for-sale securities	16,836	44,592	(27,756)	(62)%
Maturities in less than one year	16,288	43,260	(26,972)	(62)%
Maturities in greater than one year	548	1,332	$ (784)	(59)%
Total cash, cash equivalents, and available-for-sale securities	$ 52,274	$ 64,065	$ (11,791)	(18)%

The increase in cash and cash equivalents of $16.0 million as of December 31, 2023 is primarily due to the sale and maturity of our available for sale securities of $27.8 million, change in accounts receivable of $15.4 million, and proceeds from financing activities of $10.6 million. These increases were partially impacted by $14.0 million in net loss after non-cash adjustments, use of cash in accounts payable and inventory of $17.0 million, and acquisition of property and equipment and assets held for rent of $11.2 million.

Our available-for-sale securities consist of U.S. government securities, corporate debt securities, and other debt securities. Management classifies investments at the time of purchase and reevaluates such classification at each balance sheet date. The decrease in available-for-sale securities of $27.8 million resulted from the maturity of $52.7 million of available-for-sale securities during the year, offset by purchases of similar instruments of $27.1 million.

On October 19, 2023, we entered into a Securities Purchase Agreement with Casdin Partners Master Fund, L.P. ("Casdin") whereby the Company sold, and Casdin purchased, 927,165 shares of common stock of the Company at a share price of $11.19 per share for an aggregate purchase price of $10.4 million.

On September 20, 2022, the Company, and certain of its subsidiaries, entered into a term loan agreement, which provided for up to $60 million in aggregate principal to be drawn with $30 million being available upon closing and an additional

$30 million available in three separate tranches, subject to the Company meeting revenue milestones by a certain date or at the discretion of the lender by a certain date. The Company borrowed $20 million upon closing. As of December 31, 2023, the Company had not drawn additional funding outlined within the Loan Agreement. For additional information on terms, see Note 13: *Long-term debt* within the consolidated financial statements in Part II, Item 8 of this Annual Report.

Cash flows

	Year Ended December 31,			2023 vs. 2022
(In thousands, except percentages)	**2023**	**2022**	**$ Change**	**% Change**
Operating activities	$ (12,498)	$ (8,488)	$ (4,010)	(47 %)
Investing activities	17,837	(58,117)	75,954	131 %
Financing activities	10,591	16,316	(5,725)	(35) %
Net increase (decrease) in cash and cash equivalents	$ 15,930	$ (50,289)	$ 66,219	132 %

Operating activities

In the year ended December 31, 2023, our operating activities used cash of $12.5 million reflecting net loss of $66.4 million and non-cash charges totaling $53.9 million primarily related to stock-based compensation, impairment of assets, depreciation, amortization, changes in fair value of contingent consideration, gain on settlement of Global Cooling escrow, and non-cash lease charges. Significant changes in operating assets and liabilities include a decrease of accounts receivable of $15.3 million, an increase in inventory of $8.6 million, and a decrease in accounts payable of $8.4 million.

In the year ended December 31, 2022, our operating activities used cash of $8.5 million reflecting net loss of $139.8 million and non-cash charges totaling $146.2 million primarily related to impairment of intangible assets, depreciation, amortization, changes in fair value of contingent consideration, deferred income tax benefit, stock-based compensation, and non-cash lease charges. An increase in accrued expenses and current liabilities of $5.7 million was primarily driven by a $3.7 million non-income tax liability estimated for sales taxes owed and approximately $1.8 million increase in accrued compensation for increased headcount compared to the prior year. The increase in accrued expenses and current liabilities was offset by a $6.9 million reduction in warranty liability and $1.6 million reduction in accounts payable.

Investing activities

Our investing activities generated $17.8 million of cash in the year ended December 31, 2023. We had $29.1 million in net proceeds of available-for-sale securities to fund capital projects and operations. Capital expenditures and purchases of assets held for rent to maintain and expand the Company's operations used $11.2 million.

Our investing activities used $58.1 million of cash in the year ended December 31, 2022. We invested $44.6 million in available-for-sale securities in addition to continued investment in capital expenditures and purchases of assets held for rent, using an additional $13.9 million.

Financing activities

In the year ended December 31, 2023, cash provided by financing activities was $10.6 million. The increase in cash provided by financing activities compared to the prior year is primarily due to a private placement of $10.4 million and proceeds from financed insurance premiums of $2.6 million, offset by payments on financed insurance premiums of $2.4 million.

In the year ended December 31, 2022, cash provided by financing activities was $16.3 million. The increase in cash provided by financing activities compared to the prior year is primarily due to drawing $20 million on a term loan obtained on September 20, 2022, offset by payments on outstanding debt of $1.7 million and payments on financed insurance premiums of $1.4 million.

Contractual obligations

Our cash flows from operations are dependent on a number of factors, including fluctuations in our operating results, accounts receivable collections, inventory management, and the timing of tax and other payments. As a result, the impact

of contractual obligations on our liquidity and capital resources in future periods should be analyzed in conjunction with such factors. Despite these uncertainties, we believe that our balances of cash, cash equivalents, available-for-sale securities, and restricted cash in addition to our cash flows from operations are adequate to meet our liquidity requirements in the next 12 months.

The following summarizes certain of our contractual obligations as of December 31, 2023 and the effect such obligations are expected to have on our cash flows in the next fiscal year:

Long-term debt, including interest

These amounts represent expected cash payments, including principal and interest. Debt obligations are described in Note 13 of the Consolidated Financial statements in Part II, Item 8 of this Annual Report. As of December 31, 2023, our total obligations were $25.2 million, of which $6.8 million was short-term.

Lease obligations

We have various operating and financing lease agreements for office space, warehouses, manufacturing, research equipment, machinery, and production locations as well as vehicles and other equipment. Lease obligations are described in Note 6 of the Consolidated Financial statements in Part II, Item 8 of this Annual Report. As of December 31, 2023, our total obligations were $17.5 million, of which $3.2 million was short-term.

Purchase obligations

Purchase obligations are defined as agreements to purchase goods or services that are enforceable and legally binding and that specify all significant terms, including fixed or minimum quantities to be purchased, fixed, minimum or variable pricing provisions and the approximate timing of the transactions. As of December 31, 2023, our total obligations were $13.9 million, of which $13.7 million was short-term.

Sales Tax

We are in the process of evaluating a state sales tax liability analysis for states in which we have economic nexus, and collecting exemption documentation from our customers. It is probable that we will be subject to sales tax liabilities plus interest and penalties relating to historical activity in certain states. We have estimated a contingent liability for sales tax which is recorded in the Consolidated Balance Sheet. The liability includes significant judgments and estimates that may change in the future, and the liability may exceed our current estimate. We may be subject to examination by the relevant state tax authorities and we can provide no assurances that outcomes from these examinations will not have a significant effect on our operating results, financial condition, and cash flows.

Capital requirements

Our future capital requirements will depend on many factors, including the following:

- the expansion of our cell and gene therapy tools and services business
- the ability to sustain product revenue and profits of our cell and gene therapy products and services;
- The degree to which we implement additional automated production equipment throughout our facilities;
- our ability to acquire additional cell and gene therapy products and services;
- the scope of and progress made in our research and development activities; and
- the success of any proposed financing efforts.

Absent acquisitions of additional products, product candidates, or intellectual property, we believe our current cash, cash equivalents, and available-for-sale securities balances, in addition to our cash flows from operations, are adequate to meet our cash needs for at least the next 12 months as of the date of this filing. We expect operating expenses in the year ending December 31, 2024 to decrease as we continue to seek opportunities for the divestiture of our freezer product lines from our current product portfolio. We expect to incur continued spending related to the expansion of our other existing product lines and expansion of our commercial capabilities for the foreseeable future. Our future capital requirements may include, but are not limited to, purchases of property and equipment, the acquisition of additional cell and gene therapy products and technologies, and continued investment in our intellectual property portfolio.

We actively evaluate various strategic transactions on an ongoing basis, including acquiring complementary products, technologies or businesses that would complement our existing portfolio. We continue to seek to acquire such potential assets that may offer us the best opportunity to create value for our shareholders. In order to acquire such assets, we may need to seek additional financing to fund these investments. If our available cash balances and anticipated cash flow from operations are insufficient to satisfy our liquidity requirements, including because of any such acquisition-related financing needs or lower demand for our products, we may seek to sell common or preferred equity or convertible debt securities, enter into a credit facility or another form of third-party funding, or seek other debt funding. The sale of equity and convertible debt securities may result in dilution to our stockholders, and those securities may have rights senior to those of our common shares. If we raise additional funds through the issuance of preferred stock, convertible debt securities or other debt financing, these securities or other debt could contain covenants that would restrict our operations. Any other third-party funding arrangement could require us to relinquish valuable rights. We may require additional capital beyond our currently anticipated amounts. Additional capital may not be available on reasonable terms, if at all.

Sexton Biotechnologies, Inc. acquisition

On August 9, 2021, BioLife entered into an Agreement and Plan of Merger (the "Sexton Merger Agreement") with BLFS Merger Sub, Inc., a Delaware corporation ("Sexton Merger Sub"), Fortis Advisors LLC, in its capacity as the representative of the stockholders of Sexton (the "Sexton Seller Representative") and Sexton Biotechnologies, Inc., a Delaware corporation.

On September 1, 2021, the Company completed the merger of Sexton Merger Sub with and into Sexton and Sexton became a wholly owned subsidiary of the Company (the "Sexton Merger"). As consideration for the Sexton Merger (the "Sexton Merger Consideration"), holders of common stock, preferred stock and options of Sexton, other than the Company (collectively, the "Sexton Participating Holders"), were entitled to receive an aggregate of 530,502 newly issued shares of the Company's common stock, subject to certain post-closing adjustments, of which 477,452 shares of Common Stock were issued to the Sexton Participating Holders at the Closing, and 53,050 shares of Common Stock, or approximately 10% of the Merger consideration, were deposited into an escrow account for indemnification and post-closing purchase price adjustment purposes. Prior to the merger, the Company held preferred stock in Sexton, which was accounted for using a measurement alternative that measures the securities at cost minus impairment, if any. The Company accounted for the merger as a step acquisition, which required remeasurement of the Company's existing ownership in Sexton to fair value prior to completing the acquisition method of accounting. Using step acquisition accounting, the Company increased the value of its existing equity interest to its fair value, resulting in the recognition of a non-cash gain of $6.5 million, which was included in the gain on acquisition of Sexton Biotechnologies, Inc. in the Consolidated Statements of Operations in the year ended December 31, 2021. The Company utilized a market-based valuation approach to determine the fair value of the existing equity interest based on the total merger consideration offered and the Company's stock price at acquisition.

The Sexton Merger was accounted for as a purchase of a business under FASB ASC Topic 805, *Business Combinations*. The fair value of the net tangible assets acquired was approximately $4.1 million, the deferred tax liability acquired was approximately $1.5 million, the fair value of the intangible assets acquired was approximately $8.8 million, and the residual goodwill was approximately $28.5 million. The fair value calculations required critical estimates, including, but not limited to, future expected cash flows, revenue and expense projections, discount rates, revenue volatility, and royalty rates.

Global Cooling, Inc. acquisition

On March 19, 2021, the Company entered into an Agreement and Plan of Merger (the "GCI Merger Agreement") with BLFS Merger Subsidiary, Inc., a Delaware corporation ("GCI Merger Sub"), Global Cooling, a Delaware corporation and Albert Vierling and William Baumel, in their capacity as the representatives of the stockholders of GCI (collectively, the "GCI Seller Representative").

On May 3, 2021, pursuant to the GCI Merger Agreement, subject to the terms and conditions set forth therein, the transactions contemplated by the GCI Merger Agreement were consummated (the "GCI Closing"), GCI Merger Sub merged with and into GCI (the "GCI Merger" and, together with other transactions contemplated by the GCI Merger Agreement, the "GCI Transactions"), with GCI continuing as the surviving corporation in the GCI Merger and a wholly owned subsidiary of the Company. In the GCI Merger, all of the issued and outstanding shares of capital stock of GCI immediately prior to the filing of the Certificate of Merger with the Secretary of State of the State of Delaware (other than those properly exercising any applicable dissenter's rights under Delaware law) were converted into the right to receive the

GCI Merger Consideration (as defined below). The Company paid the GCI Merger Consideration to the holders of common stock and preferred stock of GCI (collectively, the "GCI Stockholders").

The aggregate merger consideration paid pursuant to the GCI Merger Agreement to the GCI Stockholders was 6,646,870 newly issued shares of common stock, provided, however, that the GCI Merger Consideration otherwise payable to GCI Stockholders was subject to the withholding of the GCI Escrow Shares (as defined below) and was subject to reduction for indemnification obligations. The GCI Merger Consideration allocable to one GCI stockholder was reduced by 10,400 shares to satisfy an outstanding note receivable of $374,000. In accordance with ASC 805, the Company recognized the settlement of pre-existing relationships in the forms of cash deposits, trade receivables, and trade payables, which are included in the consideration transferred. The GCI Merger Consideration is not subject to any purchase price adjustments.

At the GCI Closing, approximately nine percent (9%) of the GCI Merger Consideration (the "Escrow Shares", along with any other dividends, distributions or other income on the GCI Escrow Shares, the "GCI Escrow Property") otherwise issuable to the GCI Stockholders (allocated pro rata among the GCI Stockholders based on the GCI Merger Consideration otherwise issuable to them at the GCI Closing), was deposited into a segregated escrow account in accordance with an escrow agreement entered into in connection with the GCI Transactions (the "GCI Escrow Agreement").

The GCI Escrow Property was held for a period of up to twenty-four (24) months after the GCI Closing as the sole and exclusive source of payment for any post-GCI Closing indemnification claims (other than fraud claims). On September 28, 2022, BioLife asserted an indemnification claim pursuant to the GCI Merger Agreement. On June 5, 2023, the Company entered into a Settlement Agreement with the representatives of the GCI Stockholders, pursuant to which the parties agreed to release 65% of the General Escrow Shares, totaling 216,024 shares, to the Company from the GCI Escrow Account. These shares were returned to the Company and subsequently cancelled. As a result of the settlement, the Company recorded a $5.1 million gain recognizing the return of the shares during the second quarter of 2023.

The GCI Merger was accounted for as a purchase of a business under FASB ASC Topic 805, *Business Combinations*. The fair value of the net tangible assets acquired was $740,000, the deferred tax liability acquired was $24.1 million, the fair value of the intangible assets acquired was $120.5 million, and the residual goodwill was $137.8 million. The fair value calculations for intangible assets required critical estimates, including, but not limited to, future expected cash flows, revenue and expense projections, discount rates, revenue volatility, and royalty rates.

Supply chain considerations

Our domestic and international supply chain operations were affected during the years ended December 31, 2021 and 2022 by the global COVID-19 pandemic and the resulting volatility and uncertainty it caused in the U.S. and international markets. The onset of the COVID-19 pandemic caused supply chains globally to become constrained, and these constraints historically impacted our business through both increased difficulty in obtaining semiconductor chips and increased pricing on available parts across our product lines during the years ended December 31, 2021 and 2022. However, during the year ended December 31, 2023, both availability and pricing of semiconductor chips have improved and no longer pose constraints on our supply chain. We currently have sufficient supply for electrical component parts within our operations and do not foresee constraints to return over our supply chain.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Foreign currency exchange risk

The Company operates internationally, and thus is subject to potentially adverse movements in foreign currency exchange rates. Approximately 1% of the Company's consolidated net sales in the year ended December 31, 2023 were made in euros. The Company is exposed to market risk primarily from foreign exchange rate fluctuations of the euro as compared to the U.S. dollar as the financial position and operating results of the Company's foreign operations are translated into U.S. dollars for consolidation.

Month-end exchange rates between the euro and the U.S. dollar, which have not been weighted for actual sales volume in the applicable months in the periods, were as follows:

	Year Ended December 31,		
	2023	2022	2021
High	$ 1.11	$ 1.15	$ 1.24
Low	$ 1.06	$ 0.95	$ 1.12
Average	$ 1.08	$ 1.05	$ 1.18

The Company's exposure to foreign exchange rate fluctuations also arises from trade receivables and intercompany payables denominated in one currency in the financial statements, but receivable or payable in another currency.

The Company does not enter into foreign currency forward contracts to reduce its exposure to foreign currency rate changes on forecasted intercompany sales transactions or on intercompany foreign currency denominated balance sheet positions. Foreign currency transaction gains and losses are included in "Other income" in the Consolidated Statements of Operations. The effect of translating net assets of foreign subsidiaries into U.S. dollars are recorded on the Consolidated Balance Sheet as part of "Accumulated other comprehensive loss, net of taxes".

The effects of a hypothetical 10% appreciation in the U.S. dollar from December 31, 2023 levels against the euro are as follows (in thousands):

Decrease in translation of 2023 earnings into U.S. dollars	$ 150
Decrease in translation of net assets of foreign subsidiaries	$ 187

Interest rate risk

Our exposure to market risk for changes in interest rates relates primarily to our investments in available-for-sale securities and our long-term debt. We invest our excess cash in investment grade short to intermediate-term fixed income securities. These securities may have their fair market value adversely affected due to a rise in interest rates, and we may suffer losses if forced to sell securities that have declined in market value due to changes in interest rates. Our long-term debt primarily bears interest at a fixed rate, with a variable component subject to an interest rate ceiling. Fluctuations in interest rates therefore do not materially impact our consolidated financial statements from long-term debt. For additional information about our available-for-sale securities and long-term debt, see Notes 4 and 13 to the Consolidated Financial statements in Part II, Item 8 of this Annual Report.

ITEM 8. CONSOLIDATED FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Board of Directors and Shareholders
BioLife Solutions, Inc.

Opinion on the financial statements

We have audited the accompanying consolidated balance sheets of BioLife Solutions, Inc. and subsidiaries (the "Company") as of December 31, 2023 and 2022, the related consolidated statements of operations, comprehensive loss, shareholders' equity, and cash flows for each of the two years in the period ended December 31, 2023, and the related notes (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2023 and 2022, and the results of its operations and its cash flows for each of the two years in the period ended December 31, 2023, in conformity with accounting principles generally accepted in the United States of America.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) ("PCAOB"), the Company's internal control over financial reporting as of December 31, 2023, based on criteria established in the 2013 *Internal Control—Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO"), and our report dated February 29, 2024 expressed an adverse opinion.

Adoption of New Accounting Standard

As discussed in Note 1 to the consolidated financial statements, the Company has changed its method of accounting for credit losses in 2023 due to the adoption of ASU 2016-13, Measurement of Credit Losses on Financial Instruments.

Basis for opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical audit matter

The critical audit matter communicated below is a matter arising from the current period audit of the financial statements that was communicated or required to be communicated to the audit committee and that: (1) relates to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Consolidated Financial Statements - Impact of Internal Control over Financial Reporting

As described in Management's Report on Internal Control Over Financial Reporting, material weaknesses were identified as of December 31, 2023. The prevention, detection, and correction of material misstatements of the consolidated financial statements, is dependent, in part, on management (i) designing and maintaining an effective control environment, including maintaining sufficient resources within the accounting and financial reporting department to review complex financial reporting transactions; and updating and distributing accounting policies and procedures across the organization (ii) designing and implementing effective information and communication process to identify and assess the source of and controls necessary to ensure the reliability of information used in financial reporting and that communicates relevant information about roles and responsibilities for internal control over financial reporting and (iii) designing and implementing effective process-level control activities and general information technology controls related to financial

reporting processes. We identified the impact on our audit of the material weaknesses related to the control environment, information and communication, and control activities ("material weaknesses"), as further described in Management's Report, as a critical audit matter.

The principal consideration for our determination that the impact on our audit of the material weaknesses is a critical audit matter is that especially challenging auditor judgment was required in designing audit procedures and evaluating audit evidence due to the ineffective system of internal control over financial reporting, which affects substantially all consolidated financial statement account balances and disclosures.

Our audit procedures related to the material weaknesses included the following, among others.

- We determined the nature and extent of audit procedures that are responsive to the identified material weaknesses and evaluated the evidence obtained from the procedures performed.
- We lowered the threshold used for investigating differences noted for recorded amounts.
- We selected larger sample sizes for tests of details.
- We substantively tested the accuracy and completeness of system-generated reports used in the audit and more extensively tested these reports.
- We increased the extent of supervision over the execution of audit procedures.

/s/ GRANT THORNTON LLP

We have served as the Company's auditor since 2022.

Bellevue, Washington
February 29, 2024

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Shareholders and Board of Directors
BioLife Solutions, Inc.
Bothell, Washington

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated statements of operations, comprehensive loss, shareholders' equity, and cash flows of BioLife Solutions, Inc. (the "Company") for the year ended December 31, 2021, and the related notes (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the results of its operations and its cash flows for the year ended December 31, 2021, in conformity with accounting principles generally accepted in the United States of America.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's consolidated financial statements based on our audit. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) ("PCAOB") and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud.

Our audit included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audit also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audit provides a reasonable basis for our opinion.

/s/ BDO USA, LLP

We served as the Company's auditor from 2019 to 2022.

Seattle, Washington

March 31, 2022

BioLife Solutions, Inc.
Consolidated Balance Sheets

(In thousands, except per share and share data)	December 31, 2023	December 31, 2022
Assets		
Current assets:		
Cash and cash equivalents	$ 35,407	$ 19,442
Restricted cash	31	31
Available-for-sale securities, current portion	16,288	43,260
Accounts receivable, trade, net of allowance for credit losses of $1,710 and $739 as of December 31, 2023 and December 31, 2022, respectively	18,657	33,936
Inventories	43,456	34,904
Prepaid expenses and other current assets	6,765	6,879
Total current assets	120,604	138,452
Assets held for rent, net	7,713	9,064
Property and equipment, net	21,077	23,638
Operating lease right-of-use assets, net	11,446	15,292
Financing lease right-of-use assets, net	94	272
Long-term deposits and other assets	273	281
Available-for-sale securities, long term	548	1,332
Equity Investments	5,069	5,069
Intangible assets, net	21,149	32,088
Goodwill	224,741	224,741
Total assets	$ 412,714	$ 450,229
Liabilities and Shareholders' Equity		
Current liabilities:		
Accounts payable	$ 6,940	$ 15,367
Accrued expenses and other current liabilities	11,932	9,782
Sales taxes payable	5,442	4,151
Warranty liability	7,858	8,312
Lease liabilities, operating, current portion	2,797	2,860
Lease liabilities, financing, current portion	376	158
Debt, current portion	6,833	1,814
Contingent consideration, current portion	—	2,138
Total current liabilities	42,178	44,582
Contingent consideration, long-term	—	2,318
Lease liabilities, operating, long-term	13,205	14,962
Lease liabilities, financing, long-term	1,169	126
Debt, long-term	18,311	23,793
Deferred tax liabilities	188	250
Other long-term liabilities	—	10
Total liabilities	75,051	86,041
Commitments and contingencies (Note 12)		
Shareholders' equity:		
Preferred stock, $0.001 par value; 1,000,000 shares authorized, Series A, 4,250 shares designated, and 0 shares issued and outstanding as of December 31, 2023 and December 31, 2022	—	—
Common stock, $0.001 par value; 150,000,000 shares authorized, 45,167,225 and 42,832,231 shares issued and outstanding as of December 31, 2023 and December 31, 2022, respectively	45	43
Additional paid-in capital	651,305	611,739
Accumulated other comprehensive loss, net of taxes	(345)	(679)
Accumulated deficit	(313,342)	(246,915)
Total shareholders' equity	337,663	364,188
Total liabilities and shareholders' equity	$ 412,714	$ 450,229

The accompanying Notes to Consolidated Financial Statements are an integral part of these consolidated financial statements

BioLife Solutions, Inc.
Consolidated Statements of Operations

(In thousands, except per share and share data)	Years Ended December 31		
	2023	2022	2021
Product revenue	$ 117,695	$ 136,000	$ 101,913
Service revenue	17,551	15,308	9,817
Rental revenue	8,025	10,451	7,426
Total product, service, and rental revenue	143,271	161,759	119,156
Costs and operating expenses:			
Cost of product revenue (exclusive of intangible assets amortization)	75,751	88,519	69,676
Cost of service revenue (exclusive of intangible assets amortization)	15,586	12,360	5,381
Cost of rental revenue (exclusive of intangible assets amortization)	5,182	7,058	7,051
General and administrative	55,725	47,670	33,668
Sales and marketing	24,583	21,570	14,006
Research and development	18,796	14,798	11,821
Asset impairment charges	15,485	110,364	—
Intangible asset amortization	5,181	9,697	8,202
Acquisition costs	—	18	1,636
Change in fair value of contingent consideration	(2,193)	(4,754)	2,875
Total operating expenses	214,096	307,300	154,316
Operating loss	(70,825)	(145,541)	(35,160)
Other income:			
Change in fair value of warrant liability	—	—	(121)
Change in fair value of investments	—	697	—
Interest expense, net	(1,812)	(687)	(485)
Other income	1,264	704	289
Gain on settlement of Global Cooling escrow	5,115	—	—
Gain on acquisition of Sexton Biotechnologies, Inc.	—	—	6,451
Total other income, net	4,567	714	6,134
Loss before income tax (expense) benefit	(66,258)	(144,827)	(29,026)
Income tax (expense) benefit	(169)	5,022	20,118
Net loss	$ (66,427)	$ (139,805)	$ (8,908)
Net loss attributable to common shareholders:			
Basic and Diluted	$ (66,427)	$ (139,805)	$ (8,908)
Net loss per share attributable to common shareholders:			
Basic and Diluted	$ (1.52)	$ (3.29)	$ (0.23)
Weighted average shares used to compute loss per share attributable to common shareholders:			
Basic and Diluted	43,719,185	42,481,027	38,503,944

The accompanying Notes to Consolidated Financial Statements are an integral part of these consolidated financial statements

BioLife Solutions, Inc.
Consolidated Statements Of Comprehensive Loss

(In thousands)	Years Ended December 31		
	2023	2022	2021
Net loss	$ (66,427)	$ (139,805)	$ (8,908)
Other comprehensive income (loss) - foreign currency translation adjustment, net of tax	278	(347)	(282)
Unrealized gain (loss) on available-for-sale securities, net of tax	56	(50)	-
Comprehensive loss	$ (66,093)	$ (140,202)	$ (9,190)

The accompanying Notes to Consolidated Financial Statements are an integral part of these consolidated financial statements

BioLife Solutions, Inc.
Consolidated Statements of Shareholders' Equity

(In thousands, except share data)	Series A Preferred Stock Shares	Series A Preferred Stock Amount	Common Stock Shares	Common Stock Amount	Additional Paid-in Capital	Accumulated Other Comprehensive Loss	Accumulated Deficit	Total Shareholders' Equity
Balance, December 31, 2020	—	$ —	33,039,146	$ 33	$ 302,598	$ —	$ (98,202)	$ 204,429
Stock issued as consideration in GCI acquisition	—	—	6,636,470	7	232,734	—	—	232,741
Stock issued as consideration in Sexton acquisition	—	—	530,502	—	31,977	—	—	31,977
Fees incurred for registration filings	—	—	—	—	(186)	—	—	(186)
Stock-based compensation	—	—	—	—	13,956	—	—	13,956
Stock option exercises	—	—	869,065	1	1,417	—	—	1,418
Cashless exercise of 79,100 warrants	—	—	70,030	—	2,901	—	—	2,901
Stock issued – on vested RSAs	—	—	672,290	1	—	—	—	1
Foreign currency translation	—	—	—	—	—	(282)	—	(282)
Net loss	—	—	—	—	—	—	(8,908)	(8,908)
Balance, December 31, 2021	—	—	41,817,503	42	585,397	(282)	(107,110)	478,047
Stock issued as consideration for SciSafe earnout	—	—	64,130	—	817	—	—	817
Fees incurred for registration filings	—	—	—	—	(131)	—	—	(131)
Stock-based compensation	—	—	—	—	25,334	—	—	25,334
Stock option exercises	—	—	161,646	—	323	—	—	323
Stock issued – on vested RSAs	—	—	788,952	1	(1)	—	—	—
Other comprehensive loss	—	—	—	—	—	(397)	—	(397)
Net loss	—	—	—	—	—	—	(139,805)	(139,805)
Balance, December 31, 2022	—	—	42,832,231	43	611,739	(679)	(246,915)	364,188
Stock issued as consideration for SciSafe earnout	—	—	116,973	—	2,263	—	—	2,263
Fees incurred for registration filings	—	—	—	—	(132)	—	—	(132)
Stock-based compensation	—	—	—	—	31,670	—	—	31,670
Stock option exercises	—	—	239,043	—	507	—	—	507
Stock issued – on vested RSA units	—	—	1,267,837	1	(1)	—	—	—
Settlement of Global Cooling escrow	—	—	(216,024)	—	(5,115)	—	—	(5,115)
Common stock shares issued	—	—	927,165	1	10,374	—	—	10,375
Other comprehensive loss	—	—	—	—	—	334	—	334
Net loss	—	—	—	—	—	—	(66,427)	(66,427)
Balance, December 31, 2023	—	$ —	45,167,225	$ 45	$ 651,305	$ (345)	$ (313,342)	$ 337,663

The accompanying Notes to Consolidated Financial Statements are an integral part of these consolidated financial statements

BioLife Solutions, Inc.
Consolidated Statements of Cash Flows

(In thousands)	Year Ended December 31, 2023	2022	2021
Cash flows from operating activities			
Net loss	$ (66,427)	$ (139,805)	$ (8,908)
Adjustments to reconcile net loss to net cash used in operating activities			
Impairment of intangible assets	5,758	110,364	—
Impairment of long-lived assets	9,727	—	—
Gain on settlement of Global Cooling escrow	(5,115)	—	—
Depreciation	7,114	6,775	4,663
Amortization of intangible assets	5,181	9,697	8,202
Amortization of loan costs	13	18	121
Stock-based compensation	31,670	25,334	13,956
Non-cash lease expense	404	3,486	2,053
Deferred income tax benefit	(62)	(5,238)	(20,127)
Change in fair value of contingent consideration	(2,193)	(4,754)	2,875
Change in fair value of warrant liability	—	—	121
Change in fair value of investments	—	(697)	—
Accretion of investments	(1,262)	(447)	—
Gain on acquisition of Sexton Biotechnologies, Inc.	—	—	(6,451)
Loss on disposal of assets held for rent, net	594	773	609
Loss on disposal of property and equipment, net	633	745	482
Forgiveness of loans payable	—	—	(284)
Other	—	166	353
Change in operating assets and liabilities, net of effects of acquisitions			
Accounts receivable, trade, net	15,351	(10,753)	(10,132)
Inventories	(8,552)	(6,559)	114
Prepaid expenses and other current assets	137	26	2,663
Accounts payable	(8,425)	414	2,018
Accrued expenses and other current liabilities	2,002	1,787	(3,936)
Sales taxes payable	1,311	1,526	1,412
Warranty liability	(454)	(1,086)	5,833
Other	97	(260)	(230)
Net cash used in operating activities	(12,498)	(8,488)	(4,593)
Cash flows from investing activities			
Cash acquired in acquisition of Global Cooling, Inc. and Sexton Biotechnologies, Inc.	—	—	1,559
Purchases of property and equipment	(6,381)	(10,385)	(8,385)
Purchases of assets held for rent	(4,856)	(3,536)	(6,371)
Proceeds from sale of equipment	—	—	5
Proceeds from sale of available-for-sale securities	3,469	420	—
Maturities of available-for-sale securities	52,700	8,500	—
Investment in available-for-sale securities	(27,095)	(53,116)	—
Net cash provided by (used in) investing activities	17,837	(58,117)	(13,192)
Cash flows from financing activities			
Proceeds from term loan	—	20,000	—
Payments on term loan	(300)	(1,666)	—
Payments on equipment loans	(198)	(498)	(214)
Proceeds from equipment loans	—	—	1,550
Issuance of common stock	10,244	—	—
Fees paid related to issuance of common stock	—	(131)	(145)
Proceeds from line of credit	—	—	27,306
Payments on line of credit	—	—	(31,536)
Proceeds from exercise of common stock options	507	323	1,418
Proceeds from financed insurance premium	2,639	—	—
Payments on financed insurance premium	(2,365)	(1,375)	(1,033)
Other	64	(337)	(124)
Net cash provided by (used in) financing activities	10,591	16,316	(2,778)
Net increase (decrease) in cash, cash equivalents, and restricted cash	15,930	(50,289)	(20,563)
Cash, cash equivalents, and restricted cash – beginning of period	19,473	69,870	90,456
Effects of currency translation on cash, cash equivalents, and restricted cash	35	(108)	(23)
Cash, cash equivalents, and restricted cash – end of period	$ 35,438	$ 19,473	$ 69,870
Non-cash investing and financing activities			
Cashless exercise of warrants reclassified from warrant liability to common stock	$ —	$ —	$ 2,901
Stock issued as consideration to acquire Global Cooling, Inc. and Sexton Biotechnologies, Inc.	$ —	$ —	$ 264,718
Assets acquired under operating leases	$ 880	$ 243	$ 6,875
Assets acquired under finance leases	$ 1,682	$ —	$ 440
Purchase of property and equipment not yet paid	$ 359	$ 478	$ 197
Unrealized (gain) loss on available-for-sale securities	$ (56)	$ 50	$ —
Unrealized gain on currency translation	$ (12)	$ —	$ —
Cashless issuance of SciSafe earnout shares	$ 2,263	$ 817	$ —
Returned shares from settlement of Global Cooling escrow	$ (5,115)	$ —	$ —
Cash interest paid	$ 1,927	$ 586	$ 452

The accompanying Notes to Consolidated Financial Statements are an integral part of these consolidated financial statements

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. Organization and significant accounting policies

Business

BioLife Solutions, Inc. ("BioLife", "us", "we", "our", or the "Company") is a developer, manufacturer, and supplier of a portfolio of bioproduction tools and services including proprietary biopreservation media, automated thawing devices, cloud-connected shipping containers, ultra-low temperature mechanical freezers, cryogenic and controlled rate freezers, and biological and pharmaceutical materials storage. Our CryoStor freeze media and HypoThermosol hypothermic storage media are optimized to preserve cells in the regenerative medicine market. These novel biopreservation media products are serum-free and protein-free, fully defined, and are formulated to reduce preservation-induced cell damage and death. Our Sexton cell processing product line includes human platelet lysates ("hPL") for cell expansion, reducing risk and improving downstream performance over fetal bovine serum, human serum, and other chemically defined media, CellSeal cryogenic vials that are purpose-built rigid containers used in cell and gene therapy ("CGT") that can be filled manually or with high throughput systems, and automated cell processing machines that bring multiple processes traditionally performed by manual techniques under a higher level of control to protect therapies from loss or contamination. Our ThawSTAR product line is comprised of a family of automated thawing devices for frozen cell and gene therapies packaged in cryovials and cryobags. These products help administer temperature-sensitive biologic therapies to patients by standardizing the thawing process and reducing the risks of contamination and overheating, which are inherent with the use of traditional water baths. Our cryogenic freezer technology provides for controlled rate freezing and cryogenic storage of biologic materials. Our ultra-low temperature mechanical freezers allow biological materials and vaccines to be stored at temperatures which range from negative 20 ℃ to negative 86 ℃. Our evo® shipping containers provide cloud-connected passive storage and transport containers for temperature-sensitive biologics and pharmaceuticals. Our biological and pharmaceutical materials storage services provide facilities that allow for real-time tracking of biologic materials and vaccines that can be stored at a wide range of temperatures.

Use of estimates

The preparation of financial statements in conformity with generally accepted accounting principles in the United States ("U.S. GAAP") requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities as of the date of the financial statements and reported amounts of revenue and expenses during the reporting period. Actual results could differ from those estimates.

Estimates and assumptions by management affect the Company's allowance for credit losses, the net realizable value of inventory, fair value of warrant liability, sales tax liabilities, valuation of market based stock awards, valuations and purchase price allocations related to investments and business combinations, expected future cash flows including growth rates, discount rates, terminal values and other assumptions and estimates used to evaluate the recoverability of long-lived assets, estimated fair values of intangible assets and goodwill, amortization methods and periods, warranty reserves, certain accrued expenses, share-based compensation, contingent consideration from business combinations, and the provision for income taxes.

The Company regularly assesses these estimates; however, actual results could differ materially from these estimates. Changes in estimates are recorded in the period in which they become known. The Company bases its estimates on historical experience and various other assumptions that it believes to be reasonable under the circumstances.

Basis of presentation

The Consolidated Financial Statements include the accounts of the Company and its wholly owned subsidiaries, All intercompany accounts and transactions have been eliminated in consolidation.

All long-lived assets are maintained in the United States of America and the Netherlands.

Foreign currency translation

The Company translates balance sheet and income statement items into U.S. dollars. For the Company's subsidiaries that operate in a local currency functional environment, all assets and liabilities are translated into U.S. dollars using current exchange rates at the balance sheet date; revenue and expenses are translated using quarterly exchange rates which

approximate to average exchange rates in effect during each period. Resulting translation adjustments are reported as a separate component of accumulated other comprehensive loss in shareholders' equity.

Segment reporting

The Company views its operations and makes decisions regarding how to allocate resources and manages its business as one reportable segment and one reporting unit. The Company's Chief Executive Officer, who is the chief operating decision maker, reviews financial information on an aggregate basis for purposes of allocating resources and evaluating financial performance.

Revenue recognition

To determine revenue recognition for contractual arrangements that we determine are within the scope of Financial Accounting Standards Board ("FASB") Topic 606, *Revenue from Contracts with Customers*, we perform the following five steps: (i) identify each contract with a customer; (ii) identify the performance obligations in the contract; (iii) determine the transaction price; (iv) allocate the transaction price to our performance obligations in the contract; and (v) recognize revenue when (or as) we satisfy the relevant performance obligation. We only apply the five-step model to contracts when it is probable that we will collect the consideration we are entitled to in exchange for the goods or services we transfer to the customer. Contracts with customers may contain multiple performance obligations. For such arrangements, the transaction price is allocated to each performance obligation based on the observable and estimated relative standalone selling prices of the promised products or services underlying each performance obligation. The Company determines standalone selling prices based on the price at which the performance obligation is sold separately. If the standalone selling price is not observable through past transactions, the Company estimates the standalone selling price, taking into account available information such as market conditions and internally approved pricing guidelines related to the performance obligations. Payment terms and conditions vary, although terms generally include a requirement of payment within 30 to 90 days. During the year ended December 31, 2023, the Company recognized approximately $0.4 million of revenue that was included in the deferred revenue balance at the beginning of the year.

The Company primarily recognizes product revenues, service revenues, and rental revenues. Product revenues are generated from the sale of biopreservation media, ThawSTAR, and freezer products. We recognize product revenue, including shipping and handling charges billed to customers, at a point in time when we transfer control of our products to our customers, which is upon shipment for substantially all transactions. Shipping and handling costs are classified as part of cost of product revenue in the Consolidated Statements of Operations. Service revenues are generated from the storage of biological and pharmaceutical materials. We recognize service revenues over time as services are performed or ratably over the contract term. To the extent the transaction price includes variable consideration, the Company estimates the amount of variable consideration that should be included in the transaction price utilizing the expected value method or the most likely amount method, depending on the facts and circumstances relative to the contract. When determining the transaction price of a contract, an adjustment is made if payment from a customer occurs either significantly before or significantly after performance, resulting in a significant financing component. Applying the practical expedient in paragraph 606-10-32-18, the Company does not assess whether a significant financing component exists if the period between when the Company performs its obligations under the contract and when the customer pays is one year or less. None of the Company's contracts contained a significant financing component as of and during the year ended December 31, 2023.

The Company also generates revenue from the leasing of our property and equipment, operating right-of-use assets, and evo cold chain systems to customers pursuant to service contracts or rental arrangements entered into with the customer. Revenue from these arrangements is not within the scope of FASB ASC Topic 606 as it is within the scope of FASB ASC Topic 842, *Leases*. All customers leasing shippers currently do so under month-to-month rental arrangements. We account for these rental transactions as operating leases and record rental revenue on a straight-line basis over the rental term.

The Company enters into various customer service agreements (collectively, "Service Contracts") with customers to provide biological and pharmaceutical storage services. In certain of these Service Contracts, the property and equipment or operating right-of-use assets used to store a customer's product are used only for the benefit of one customer. This is primarily driven by the customer's desire to ensure that sufficient storage capacity is available in a specific geographic location for a set period of time. These agreements may include extension and termination clauses. These Service Contracts do not allow for customers to purchase the underlying assets.

The Company has assessed its Service Contracts and concluded that certain of the contracts for the storage of customer products met the criteria to be considered a leasing arrangement ("Embedded Leases"), with the Company as the lessor. The specific Service Contracts that met the criteria were those that provided a single customer with the ability to substantially direct the use of the Company's property, plant, and equipment or operating right-of-use assets.

The Company recognizes operating right-of-use asset embedded lessor arrangements on its Consolidated Balance Sheets in Operating right-of-use assets. None of the Embedded Leases identified by the Company qualify as a sales-type or direct finance lease. None of the operating leases for which the Company is the lessor include options for the lessee to purchase the underlying asset at the end of the lease term or residual value guarantees, nor are any such operating leases with related parties.

Embedded Leases may contain both lease and non-lease components. We have elected to utilize the practical expedient to account for lease and non-lease components together as a single combined lease component as the timing and pattern of transfer are the same for the non-lease components and associated lease component and, the lease component, if accounted for separately, would be classified as an operating lease. Non-lease components of the Company's rental arrangements include reimbursements of lessor costs.

Total bioproduction tools and services revenue for the years ended December 31, 2023, 2022, and 2021 were comprised of the following:

	Years Ended December 31,		
(In thousands, except percentages)	**2023**	**2022**	**2021(1)**
Product revenue			
Freezer and thaw	$ 50,622	$ 66,682	$ 56,620
Cell processing	65,772	68,509	44,965
Biostorage services	1,301	809	328
Service revenue			
Freezer and thaw	1,024	74	-
Biostorage services	16,527	15,234	9,817
Rental revenue			
Biostorage services	8,025	10,451	7,426
Total revenue	$ 143,271	$ 161,759	$ 119,156

(1) 2021 revenue includes product revenue related to Global Cooling from May 3, 2021 through December 31, 2021 and product revenue related to Sexton from September 1, 2021 through December 31, 2021.

The following table includes estimated rental revenue expected to be recognized in the future related to embedded leases as well as estimated service revenue expected to be recognized in the future related to performance obligations that are unsatisfied or partially unsatisfied as of the end of the reporting periods. The Company elected not to disclose the value of the remaining unsatisfied performance obligation with a duration of one year or less as permitted by the practical expedient in ASU 2014-09, *Revenue from Contracts with Customers*. The estimated revenue in the following table does not include contracts with the original durations of one year or less, amounts of variable consideration attributable to royalties, or contract renewals that are unexercised as of December 31, 2023.

The balances in the table below are partially based on judgments involved in estimating future orders from customers subject to the exercise of material rights pursuant to respective contracts:

(In thousands)	**2024**	**Total**
Rental revenue	$ 900	$ 900
Service revenue	$ 50	$ 50

Risks and uncertainties

Supply chain considerations

Our domestic and international supply chain operations were affected during the years ended December 31, 2021 and 2022 by the global pandemic of COVID-19 and the resulting volatility and uncertainty it caused in the U.S. and international markets. The onset of the COVID-19 pandemic caused supply chains globally to become constrained, and these constraints historically impacted our business through both increased difficulty in obtaining semiconductor chips and increased pricing on available parts. However, as of the year ended December 31, 2023, both availability and pricing of semiconductor chips have improved and no longer pose constraints on our supply chain. We currently have sufficient supply for electrical component parts within our operations and do not foresee constraints to return over our supply chain.

Earnings per share

The Company considers its unexercised warrants and unvested restricted shares, which contain non-forfeitable rights to dividends, participating securities, and includes such participating securities in its computation of earnings per share pursuant to the two-class method. Basic earnings per share for the two classes of stock (common stock and warrants) is calculated by dividing net income by the weighted average number of shares of common stock and warrants outstanding during the reporting period. Diluted earnings per share is calculated using the weighted average number of shares of common stock plus the potentially dilutive effect of common equivalent shares outstanding determined under both the two-class method and the treasury stock method, whichever is more dilutive. In periods when we have a net loss, common stock equivalents are excluded from our calculation of earnings per share as their inclusion would have an antidilutive effect.

The following table presents computations of basic and diluted earnings per share:

	Year Ended December 31,		
(In thousands, except share and earnings per share data)	**2023**	**2022**	**2021**
Basic and diluted loss per common share			
Numerator:			
Net loss	$ (66,427)	$ (139,805)	$ (8,908)
Net loss attributable to common shareholders	(66,427)	(139,805)	(8,908)
Denominator:			
Weighted-average common shares issued and outstanding	43,719,185	42,481,027	38,503,944
Basic and diluted loss per common share	$ (1.52)	$ (3.29)	$ (0.23)

The following table sets forth the number of shares excluded from the computation of diluted loss per share, as their inclusion would have been anti-dilutive:

	Year Ended December 31,		
	2023	**2022**	**2021**
Stock options and restricted stock awards	647,348	592,446	1,637,745
Warrants	—	—	18,204
Total	647,348	592,446	1,655,949

Cash, cash equivalents, and restricted cash

Cash equivalents consist primarily of interest-bearing money market accounts. We consider all highly liquid debt instruments purchased with an initial maturity of three months or less to be cash equivalents. We maintain cash balances that may exceed federally insured limits. We do not believe that this results in any significant credit risk.

Restricted cash consists entirely of amounts that will be recovered from escrow in relation to the acquisition of SciSafe. The restricted cash is short term in nature, as the Company anticipates to receive the funds within one year of the balance sheet date.

The following is a summary of the Company's cash, cash equivalents, and restricted cash total as presented in the Company's Consolidated Statements of Cash Flows for the years ended December 31, 2023 and 2022.

(In thousands)	2023	2022
Cash and cash equivalents	$ 35,407	$ 19,442
Restricted cash	31	31
Total cash, cash equivalents, and restricted cash	$ 35,438	$ 19,473

Available-for-sale securities

Available-for-sale securities consist of U.S. government securities, corporate debt securities, and other debt securities. Management classifies investments at the time of purchase and reevaluates such classification at each balance sheet date. Investments with maturities beyond one year may be classified as short-term based on their liquid nature and because such marketable securities represent the investment of cash that is available for current operations. Available-for-sale securities are reported at fair value based on quoted market prices and other observable market data. Unrealized gains and losses are reported as a component of other comprehensive (loss) income, net of any related tax effect. Realized gains and losses and other-than-temporary impairments on investments are included in other income.

Inventories

Inventories relate to the Company's cell and gene therapy products. The Company values biopreservation media inventory at cost or, if lower, net realizable value, using the specific identification method. All other inventory is valued at cost or, if lower, net realizable value, using the first-in, first-out method. The Company reviews its inventories at least quarterly and records a provision for inventory that has become obsolete, inventory that has a cost basis in excess of its expected net realizable value, and inventory in excess of expected revenue volume to cost of product revenue. The Company bases its estimates on expected product revenue volume, production capacity and expiration dates of raw materials, work in process, and finished products. A change in the estimated timing or amount of demand for the Company's products could result in additional provisions for excess inventory quantities on hand. Any significant unanticipated changes in demand or unexpected quality failures could have a significant impact on the value of inventory and reported operating results. During all periods presented in the accompanying consolidated financial statements, there have been no material adjustments related to a revised estimate of inventory valuations. However, during the year ended December 31, 2023, we assessed nonrecurring write-downs of approximately $5.7 million. For additional information, see Note 5: *Inventories*. Work-in-process and finished products inventories consist of material, labor, outside testing costs and manufacturing overhead.

Accounts receivable

Accounts receivable consist of short-term amounts due from our customers (generally 30 to 90 days) and are stated at the amount we expect to collect. We establish an allowance for credit losses based on our assessment of the collectability of specific customer accounts.

Accounts receivable are stated at principal amount, do not bear interest, and are generally unsecured. We provide an allowance for credit losses based on an evaluation of the collectability of customer account balances. Accounts considered uncollectible are charged against the established allowance.

Equity investments

We periodically invest in securities of private companies to promote business and strategic objectives. These investments are measured and recorded as follows:

Non-marketable equity securities are equity securities without a readily determinable fair value. As of December 31, 2023 and December 31, 2022, these investments are comprised of $4.1 million in Series A-1 and A-2 Preferred Stock in iVexSol, Inc. ("iVexSol") and $995,000 in Series E Preferred Stock in PanTHERA CryoSolutions, Inc. ("PanTHERA").

In November of 2020, the Company elected to convert a convertible note from its investment in Sexton, which was fully acquired as of September 1, 2021, into Series A-1 Preferred Stock and invest an additional $1.0 million in Series A-2 Preferred Stock in iVexSol. The Preferred Stock investments in iVexSol are carried at cost minus impairment, if any, plus or minus changes resulting from observable process changes in orderly transactions for identical or similar investments of

the same issuer. Gains related to the increase in fair value of this convertible note were zero, $0.7 million, and zero for the years ended December 31, 2023, 2022, and 2021, respectively.

In November of 2020, the Company invested $995,000 in Class E Preferred Shares in PanTHERA CryoSolutions, Inc. In conjunction with this investment, the Company executed a development and license agreement with PanTHERA under which the Company will make milestone development payments up to $2.0 million in the event that certain milestones are met in exchange for exclusive, perpetual, worldwide marketing and distribution rights to the technology for use in cell and gene therapy applications. In June of 2021, PanTHERA satisfied the first milestone and the Company paid $200,000 in accordance with the agreement. The Preferred Stock investments in PanTHERA are carried at cost minus impairment, if any, plus or minus changes resulting from observable process changes in orderly transactions for identical or similar investments of the same issuer.

As of December 31, 2023, management believes there are no indications of impairment or changes in fair value for the investments in iVexSol or PanTHERA.

Property and equipment

Property and equipment are stated at cost and are depreciated using the straight-line method over estimated useful lives of three to ten years. Leasehold improvements are amortized using the straight-line method over the shorter of the estimated useful lives of the assets or the remaining lease term of the respective assets. Gains or losses on disposals of property and equipment are recorded within income from operations. Costs of repairs and maintenance are included as part of operating expenses unless they are incurred in relation to major improvements to existing property and equipment, at which time they are capitalized.

Assets held for rent

Assets held for rent are carried at cost less accumulated depreciation. These assets consist of dedicated storage space, evo shippers and related components in production shippers complete and ready to be deployed and placed in service upon a customer order, shippers in the process of being assembled, and components available to build shippers. Assets utilized to provide dedicated storage space are depreciated over their applicable useful lives once placed in service. Shippers are depreciated over a useful life of three years when in use by customers.

Our customers rent assets per a rental agreement. Each agreement provides for fixed monthly rent. Rental revenue and fees are recognized over the rental term on a straight-line basis. We retain the ownership of the assets rented. At the end of the rental agreement, the customer returns the asset to the Company.

Assets held for rent are reviewed for impairment whenever events or changes in circumstances indicate that their net book value may not be recoverable. Carrying values are reviewed for recoverability at the asset grouping level to determine if the facts and circumstances suggest that a potential impairment may have occurred. If the sum of the expected future cash flows (undiscounted and before interest) from the use of the assets is less than the net book value of the asset, an impairment could exist and the amount of the impairment loss, if any, will generally be measured as the difference between the net book value of the assets and their estimated fair values. There were no impairment losses recognized during the years ended December 31, 2023, 2022, and 2021.

Long-Lived Assets

The Company reviews long-lived assets, including property and equipment, leased assets, and definite life intangible assets for impairment whenever events and changes in circumstances indicate that the carrying value of an asset may not be recoverable. In order to determine if assets have been impaired, assets are grouped and tested at the lowest level for which identifiable independent cash flows are available ("asset group"). An impairment loss is recognized when the sum of the projected undiscounted cash flows is less than the carrying value of the asset group. The measurement of the impairment loss to be recognized is based on the difference between the fair value and the carrying value of the asset group. Fair value can be determined using a market approach, income approach or cost approach.

Lease accounting

We determine if an arrangement is a lease at inception. Where an arrangement is a lease, we determine if it is an operating lease or a financing lease. At lease commencement, we record a lease liability and corresponding right-of-use (“ROU”)

asset. Lease liabilities represent the present value of our future lease payments over the expected lease term which includes options to extend or terminate the lease when it is reasonably certain those options will be exercised. The present value of our lease liability is determined using our incremental collateralized borrowing rate at lease inception. ROU assets represent our right to control the use of the leased asset during the lease and are recognized in an amount equal to the lease liability for leases with an initial term greater than 12 months. Over the lease term we use the effective interest rate method to account for the lease liability as lease payments are made and the ROU asset is amortized in a manner that results in straight-line expense recognition.

We elected to apply the practical expedient for short-term leases and accordingly do not apply lease recognition requirements for short-term leases with a duration less than twelve months. Instead, we recognize payments related to these arrangements in the Consolidated Statement of Operations as lease costs on a straight-line basis over the lease term.

Warranty

Our standard warranty terms typically extend between one year and seven years from the date of delivery. We accrue for standard warranty costs based on historical trends in warranty charges. The accrual is reviewed regularly and periodically adjusted to reflect changes in warranty cost over the period.

Income taxes

We account for income taxes using an asset and liability method which generally requires recognition of deferred tax assets and liabilities for the expected future tax effects of events that have been included in the financial statements or tax returns. Under this method, deferred tax assets and liabilities are recognized for the future tax effects of differences between tax bases of assets and liabilities, and financial reporting amounts, based upon enacted tax laws and statutory rates applicable to the periods in which the differences are expected to affect taxable income. We evaluate the likelihood of realization of deferred tax assets and provide an allowance where, in management’s opinion, it is more likely than not that the asset will not be realized. Our policy for interest and penalties is to recognize interest and penalties as a component of the provision for income taxes in the Consolidated Statement of Operations.

We determine any uncertain tax positions based on a determination of whether and how much of a tax benefit taken in the Company’s tax filings or positions is more likely than not to be sustained upon examination by the relevant income tax authorities.

Judgment is applied in the determination of the financial statement recognition and measurement of tax positions taken or expected to be taken in a tax return. As of December 31, 2023, the Company has an unrecognized tax benefit of $2.2 million related to tax attributes being carried forward. The Company is generally subject to examination by U.S. federal and local income tax authorities for all tax years in which loss carryforward is available.

Sales Taxes Payable

The Company records sales tax collected from customers on a net basis, and therefore excludes it from total product, service and rental revenue as defined in ASC 606. Cash collected from customers is recorded in accrued expenses on the Company's Consolidated Balance Sheet and then remitted to the proper taxing authority. In addition, refer to Note 12: *Commitments and contingencies* for discussion regarding an estimated sales tax liability the Company recorded in relation to historical activity in certain states. As of December 31, 2023, total interest expenses assessed on sales tax liabilities was $0.4 million.

Advertising

Advertising costs are expensed as incurred and totaled $1.5 million, $0.8 million, and $0.6 million for the years ended December 31, 2023, 2022, and 2021, respectively.

Concentrations of risk

During the years ended December 31, 2023, 2022, and 2021, we derived approximately 16%, 18%, and 17% of our revenue from the same customer, respectively. No other customers accounted for more than 10% of revenues. Revenue from foreign customers is denominated in United States dollars or euros.

	Years Ended December 31,		
Revenue by major product	**2023**	**2022**	**2021**
CryoStor	39 %	36 %	33 %
780XLE Freezer	19 %	22 %	22 %

In the years ended December 31, 2023, 2022, and 2021, no suppliers accounted for more than 10% of purchases.

The following table represents the Company's total revenue by geographic area (based on the location of the customer):

	Years Ended December 31,		
Revenue by customers' geographic locations[1]	**2023**	**2022**	**2021**
United States[2]	80 %	79 %	85 %
Europe, Middle East, Africa (EMEA)	16 %	16 %	11 %
Other	4 %	5 %	4 %
Total revenue	100 %	100 %	100 %

(1) During the year ended December 31, 2023, the Company updated its methodology for determining the country of origin for its sales. Sales are now recorded by shipping country rather than billing country. The Company updated the methodology retrospectively, adjusting the prior year presentation for all regions presented.

(2) The line item presented above previously bifurcated sales between the United States and Canada. Due to the updated methodology for determining the country of origin for sales, it was noted that Canada no longer was a material location to separately disclose. Canada sales have been included within the "Other" line item in the table above and United States sales has been retained as its own line item to more accurately reflect origin of sales for material regions.

The following table represents the Company's long-lived assets by geographic area as of December 31:

(In thousands)	**2023**	**2022**
United States	$ 33,378	$ 42,829
Netherlands	6,952	5,437
Total	$ 40,330	$ 48,266

As of December 31, 2023, one customer accounted for 14% of gross accounts receivable. As of December 31, 2022, two customers accounted for 26% of gross accounts receivable. No other customers accounted for more than 10% of our gross accounts receivable.

As of December 31, 2023, one supplier accounted for 12% of accounts payable. As of December 31, 2022, a different supplier accounted for 23% of accounts payable. No other suppliers accounted for more than 10% of our accounts payable.

Research and development

Research and development costs are expensed as incurred.

Stock-based compensation

We measure and record compensation expense using the applicable accounting guidance for share-based payments related to stock options, time-based restricted stock, market-based restricted stock awards and performance-based restricted stock awards granted to our directors and employees. The fair value of stock options, including performance awards, without a market-based condition is determined by using the Black-Scholes option-pricing model. The fair value of restricted stock

awards with a market condition is estimated at the date of grant using the Monte Carlo Simulation model. The Black-Scholes and Monte Carlo Simulation valuation models incorporate assumptions as to stock price volatility, the expected life of options or awards, a risk-free interest rate and dividend yield. The fair value of restricted stock, including performance awards, without a market condition is estimated using the current market price of our common stock on the date of grant.

We expense stock-based compensation for stock options, restricted stock awards, and performance awards over the requisite service period. For awards with only a service condition, we expense stock-based compensation using the straight-line method over the requisite service period for the entire award. For awards with a market condition, we expense the grant date fair value over the vesting period regardless of the value that the award recipients ultimately receive.

We have, from time to time, modified the terms of restricted stock awards awarded to employees. We account for the incremental increase in the fair value over the original award on the date of the modification as an expense for vested awards or over the remaining service (vesting) period for unvested awards. The incremental compensation cost is the excess of the fair value of the modified award on the date of modification over the fair value of the original award immediately before the modification.

Business combinations

The Company accounts for business acquisitions using the acquisition method as required by FASB ASC Topic 805, *Business Combinations*. The Company's identifiable assets acquired and liabilities, including identified intangible assets, assumed in a business combination are recorded at their acquisition date fair values. The valuation requires management to make significant estimates and assumptions, especially with respect to long-lived and intangible assets. Critical estimates in valuing intangible assets include, but are not limited to i) future expected cash flows, including revenue and expense projections; ii) discount rates to determine the present value of recognized assets and liabilities and; iii) revenue volatility to determine contingent consideration using option pricing models. The excess of the acquisition price over the fair value of net assets acquired, including the amount assigned to identifiable intangible assets is the resulting goodwill. Acquisition-related costs, including advisory, legal, accounting, valuation, and other costs, are expensed in the periods in which these costs are incurred. The results of operations of an acquired business are included in the consolidated financial statements beginning at the acquisition date.

The Company estimates the acquisition date fair value of the acquisition-related contingent consideration using various valuation approaches, including option pricing models, as well as significant unobservable inputs, reflecting the Company's assessment of the assumptions market participants would use to value these liabilities. The fair value of the contingent consideration is remeasured each reporting period.

During the measurement period, which may be up to one year from the acquisition date, any refinements made to the fair value of the assets acquired, liabilities assumed, or contingent consideration are recorded in the period in which the adjustments are recognized. Upon the conclusion of the measurement period or final determination of the fair value of the assets acquired, liabilities assumed, or contingent consideration, whichever comes first, any subsequent adjustments are recognized in the Consolidated Statements of Operations.

Goodwill

Goodwill represents the excess of the purchase price over the net amount of identifiable assets acquired and liabilities assumed in a business combination measured at fair value. Goodwill is not amortized but is tested for impairment at least annually. The Company reviews goodwill for impairment annually in the fourth quarter and whenever events or changes in circumstances indicate that the fair value of a reporting unit may be less than its carrying amount (a triggering event). The Company first assesses qualitative factors to determine whether it is more likely than not that the fair value of its reporting unit is less than its carrying amount as a basis for determining whether it is necessary to perform the quantitative goodwill impairment test described in FASB ASC Topic 350, *Intangibles – Goodwill and Other*. The more likely than not threshold is defined as having a likelihood of more than 50 percent. If, after assessing the totality of events or circumstances, the Company determines that it is not more likely than not that the fair value of a reporting unit is less than its carrying amount, then performing the quantitative goodwill impairment test is unnecessary and goodwill is considered to be unimpaired. However, if based on the qualitative assessment the Company concludes that it is more likely than not that the fair value of a reporting unit is less than its carrying amount, the Company will proceed with performing the quantitative goodwill impairment test. In performing the quantitative goodwill impairment test, the Company determines the fair value of its reporting unit and compares it to its carrying value. If the fair value of the reporting unit exceeds the carrying value of the

net assets assigned to that unit, goodwill is not impaired. If the carrying value of the reporting unit exceeds its fair value, the Company records an impairment loss equal to the difference. The Company operates as one reporting unit as of the goodwill impairment measurement date in the fourth quarter of 2023. As of the testing date and the period after that date through the issuance date of our financial statements, the Company has observed no indicators of potential goodwill impairment at any point during the period based on its required assessment.

Intangible assets

Intangible assets with a definite life are amortized over their estimated useful lives using the straight-line method and the amortization expense is recorded within intangible asset amortization in the Consolidated Statements of Operations. If the estimate of a definite-lived intangible asset's remaining useful life is changed, the remaining carrying amount of the intangible asset is amortized prospectively over the revised remaining useful life. Definite-lived intangible assets and their related estimated useful lives are reviewed at least annually to determine if any adverse conditions exist that would indicate the carrying value of these assets may not be recoverable. Refer to Note 2: *Impairment of property and equipment and definite-lived intangible assets* for further details of impairment charges assessed during the years ended December 31, 2023 and 2022.

Indefinite-lived intangibles are carried at the initially recorded fair value less any recognized impairment. Indefinite-lived intangibles are tested annually for impairment. Impairment assessments are conducted more frequently if certain conditions exist, including a change in the competitive landscape, any internal decisions to pursue new or different technology strategies, a loss of a significant customer, or a significant change in the marketplace, including changes in the prices paid for the Company's products or changes in the size of the market for the Company's products. If impairment indicators are present, the Company determines whether the underlying intangible asset is recoverable through estimated future undiscounted cash flows. If the asset is not found to be recoverable, it is written down to the estimated fair value of the asset based on the sum of the future discounted cash flows expected to result from the use and disposition of the asset. Refer to Note 2: *Impairment of property and equipment and definite-lived intangible assets* for further details.

Recent accounting pronouncements

As of January 1, 2023, we adopted ASU 2016-13, *Measurement of Credit Losses on Financial Instruments*, which later was codified as ASC 326 (CECL). In addition to the adoption of ASC 326, the Company adopted the accompanying Accounting Standard Update ("ASU") No. 2022-02, *Financial Instruments-Credit Losses (Topic 326): Troubled Debt Restructurings and Vintage Disclosures*. Both standards mark a significant change requiring the immediate recognition of estimated credit losses expected to occur over the remaining life of many financial assets. ASU 2022-02 specifically eliminates the accounting guidance for troubled debt restructurings and requires disclosure of current-period gross write-offs by year of loan origination. Additionally, ASU 2022-02 updates the accounting for credit losses under ASC 326 and adds enhanced disclosures with respect to loan refinancings and restructurings in the form of principal forgiveness, interest rate concessions, other-than-insignificant payment delays, or term extensions when the borrower is experiencing financial difficulties. ASC 326 is intended to improve financial reporting by corporations by requiring earlier recognition of credit losses on loans from corporations, held-to-maturity (HTM) securities, and certain other financial assets. ASC 326 also amended the impairment guidance for available-for-sale (AFS) debt securities in that it eliminated the Other Than Temporary Impairment (OTTI) impairment model. Under Subtopic ASC 326-30, *Financial Instruments—Credit Losses—Available-for-Sale Debt Securities*, changes in expected cash flows due to credit on AFS debt securities will be recorded through an allowance, rather than permanent write-downs for negative changes and prospective yield adjustments for positive changes, as required by the current OTTI model. ASC 326 replaces the current incurred loss impairment model that recognizes losses when a probable threshold is met with a requirement to recognize lifetime expected credit losses immediately when a financial asset is originated or purchased. For the year ended December 31, 2023, the adoption of ASC 326 did not result in a material effect on the Company's Consolidated financial statements.

In December 2023, the Financial Accounting Standards Board ("FASB") issued ASU No. 2023-09, *Improvements to Income Tax Disclosures* ("ASU 2023-09"), which requires additional disaggregated information about a reporting entity's effective tax rate reconciliation as well as information increasing transparency of income taxes paid. The standard is intended to benefit investors by providing more detailed income tax disclosures that would be useful in making capital allocation decisions. This ASU is effective for public companies with annual periods beginning after December 15, 2024, with early adoption permitted. The Company is currently evaluating the effects adoption of this guidance will have on the consolidated financial statements.

In November 2023, the FASB issued ASU No. 2023-07, *Improvements to Reportable Segments Disclosures*. While ASU 2023-07 requires incremental disclosures, it does not change how an entity identifies its operating segments, aggregates those operating segments, or applies the quantitative thresholds to determine reportable segments. This ASU is effective for all public business entities for fiscal years beginning after December 15, 2023, and interim periods within fiscal years beginning after December 15, 2024. Entities must adopt the changes to the segment reporting guidance on a retrospective basis. We do not expect a material impact as a result of adopting this amendment.

In October 2023, the FASB issued ASU No. 2023-06, *Disclosure Improvements: Codification Amendments in Response to the SEC's Disclosure Update and Simplification Initiative*, which amends U.S. GAAP to reflect updates and simplifications to certain disclosure requirements referred to FASB by the SEC. The targeted amendments incorporate 14 of the 27 disclosures referred by the SEC into Codification. Some of the amendments represent clarifications to, or technical corrections of, the current requirements. Each amendment in ASU 2023-06 will only become effective if the SEC removes the related disclosure or presentation requirement from its existing regulation by June 30, 2027. No amendments were effective at December 31, 2023. The Company is still currently evaluating the impact of the adoption of the new standard but does not expect a significant impact on the consolidated financial statements.

In June 2022, the FASB issued ASU No. 2022-03, *Fair Value Measurements (Topic 820): Fair Value Measurement of Equity Securities Subject to Contractual Sales Restrictions* ("ASC Topic 820"). The FASB issued ASU 2022-03 to (1) clarify the guidance in Topic 820, Fair Value Measurement, when measuring the fair value of an equity security subject to contractual restrictions that prohibit the sale of an equity security, (2) to amend a related illustrative example, and (3) to introduce new disclosure requirements for equity related securities subject to contractual sale restrictions that are measured at fair value in accordance with Topic 820. ASU 2022-03 clarifies that a contractual restriction on the sale of an equity security is not considered part of the unit of account of the equity security and, therefore, is not considered in measuring fair value. The guidance is effective for fiscal years beginning after December 15, 2023, and interim periods within those fiscal years with early adoption permitted. We are evaluating when to adopt the amendments in ASU 2022-03. We do not expect a material impact as a result of adopting this amendment.

In March 2022, the FASB issued ASU No. 2022-02 *Financial Instruments-Credit Losses (Topic 326*): *Troubled Debt Restructurings and Vintage Disclosures*. ASU 2022-02 eliminates the accounting guidance for troubled debt restructurings and requires disclosure of current-period gross write-offs by year of loan origination. Additionally, ASU 2022-02 updates the accounting for credit losses under ASC 326 and adds enhanced disclosures with respect to loan refinancings and restructurings in the form of principal forgiveness, interest rate concessions, other-than-insignificant payment delays, or term extensions when the borrower is experiencing financial difficulties. ASU 2022-02 is effective for fiscal years beginning after December 15, 2022 and early adoption is permitted. The Company adopted this guidance and it did not have a material impact on the Company's Consolidated Financial Statements.

In November 2021, the FASB issued ASU No. 2021-10, *Government Assistance (Topic 832): Disclosures by Business Entities about Government Assistance,* to increase the transparency of government assistance including the disclosure of the types of assistance an entity receives, an entity's method of accounting for government assistance, and the effect of the assistance on an entity's financial statements. The guidance in this update will be effective for fiscal years beginning after December 15, 2023, with early application of the amendments allowed. The amendments are to be applied prospectively to all transactions within the scope of the amendments that are reflected in financial statements at the date of initial application and new transactions that are entered into after the date of initial application or, retrospectively to those transactions. The Company is currently evaluating the impact of this standard on its consolidated financial statements.

In October 2021, the FASB issued ASU No. 2021-08, *Business Combinations (Topic 805): Accounting for Contract Assets and Contract Liabilities from Contracts with Customers*. This update amends guidance to require that an entity (acquirer) recognize and measure contract assets and contract liabilities acquired in a business combination in accordance with *Revenue from Contracts with Customers (Topic 606*). At the acquisition date, an acquirer should account for the related revenue contracts in accordance with Topic 606 as if it had originated the contracts. ASU 2021-08 is effective for fiscal years beginning after December 15, 2022, including interim periods within those fiscal years. Early adoption of the amendments is permitted including adoption in an interim period. The Company adopted this guidance and it did not have a material impact on the Company's Consolidated Financial Statements.

In March 2020, the FASB issued ASU No. 2020-04, *Reference Rate Reform (Topic 848): Facilitation of the Effects of Reference Rate Reform on Financial Reporting*. ASU 2020-04 provides optional expedient and exceptions for applying generally accepted accounting principles to contracts, hedging relationships, and other transactions affected by reference rate reform if certain criteria are met. In response to the concerns about structural risks of interbank offered rates and,

particularly, the risk of cessation of the London Interbank Offered Rate ("LIBOR"), regulators in several jurisdictions around the world have undertaken reference rate reform initiatives to identify alternative reference rates that are more observable or transaction-based and less susceptible to manipulation. The ASU provides companies with optional guidance to ease the potential accounting burden associated with transitioning away from reference rates that are expected to be discontinued. In January 2021, the FASB issued ASU 2021-01, *Reference Rate Reform—Scope*, which clarified the scope and application of the original guidance. In December 2022, the FASB issued ASU 2022-06, *Reference Rate Reform—Deferral of the Sunset Date of Topic 848*. This update extends the sunset provision of ASU 2020-04 to December 31, 2024. The Company has not yet adopted this ASU and is evaluating the effect of adopting this new accounting guidance.

2. Impairment of property and equipment and definite-lived intangible assets

Impairment testing as of September 30, 2023

Subsequent to the second quarter of 2023, the Company began to initially seek divestment of its Freezer Business. The announcement, coupled with broader economic uncertainty leading to reductions in spending across the biopharma industry and the Company's customer base constituted interim triggering events that required further analysis with respect to potential impairment to goodwill, indefinite-lived intangibles, and its long-lived asset groups. The Company performed an interim quantitative impairment test as of the September 30, 2023 balance sheet date.

To assess any potential impairment of goodwill, the Company compared the carrying value of its single reporting unit against its market capitalization, noting that the market capitalization exceeded the carrying value. As such, goodwill was not impaired as of September 30, 2023.

As a part of the interim quantitative impairment analysis performed, the Company determined that decreases in the market price of the GCI long-lived asset group and historical operating cash flow losses for both GCI and CBS were indicative of potential impairment. The recoverability tests performed over the asset groups of the Freezer Business resulted in a $9.7 million non-cash impairment charge over property and equipment and a $5.8 million non-cash impairment charge over definite-lived intangible assets.

In order to determine the fair value of the property and equipment, acquired technology, customer relationships, and tradename definite-lived intangible assets, the Company utilized the market approach and discounted cash flow analyses to determine if the recoverability of the Freezer Business asset groups were above its carrying value. The key assumptions associated with determining the estimated fair value include (i) the amount and timing of projected future cash flows (including revenue and expenses), (ii) the discount rate selected to measure the risks inherent in the future cash flows, (iii) the assessment of the asset's life cycle, and (iv) the competitive trends impacting the asset. As a result of the analysis, we recognized non-cash impairment charges of $9.7 million, $3.1 million, $0.2 million, and $2.5 million during the period ended September 30, 2023 for the property and equipment, acquired technology, customer relationships, and tradename definite-lived intangible assets, respectively, which represents the difference between the estimated fair value of the Company's definite-lived intangible assets and their carrying values.

Fair value determinations require considerable judgment and are sensitive to changes in underlying assumptions, estimates and market factors. Estimating the fair value of the Company's reporting unit and definite-lived intangible assets requires us to make assumptions and estimates regarding our future plans, as well as industry, economic, and regulatory conditions. These assumptions and estimates include projected future revenue growth rates, EBITDA margins, terminal growth rates, discount rates, royalty rates and other market factors. If current expectations of future growth rates, margins and cash flows are not met, or if market factors outside of our control change significantly, then our reporting unit, indefinite-lived intangible assets, and definite-lived intangible assets might become impaired in the future, negatively impacting our operating results and financial position. As the carrying amounts of the Company's definite-lived intangible assets were impaired as of September 30, 2023 and written down to fair value, those amounts are more susceptible to an impairment risk if there are unfavorable changes in assumptions and estimates.

Impairment testing during the year ended December 31, 2022

In the six months ended June 30, 2022, the Company experienced a significant decline in its market capitalization. In July 2022, the Company abandoned an in-process research and development project within the asset group acquired in the acquisition of Global Cooling and revised its forecasts for net income and net cash flows to be generated by that asset group. The Company determined that these three events constituted interim triggering events that required further analysis with respect to potential impairment to goodwill, indefinite-lived intangibles, and definite-lived intangibles. The Company performed an interim quantitative impairment test as of the June 30, 2022 balance sheet date.

To assess any potential impairment of goodwill, the Company compared the carrying value of its single reporting unit against its market capitalization, noting that the market capitalization exceeded the carrying value. As such, goodwill was not impaired as of June 30, 2022.

Additionally, the Company annually performs an impairment assessment as of October 1. To assess any potential impairment of goodwill, the Company compared the carrying value of its single reporting unit against its market capitalization, noting that the market capitalization exceeded the carrying value. As such, goodwill was not impaired as of October 1, 2022.

In order to determine the fair value of our indefinite-lived intangible assets acquired from Global Cooling, which included an in-process research and development project, the Company utilized a discounted cash flow analysis. In order to determine the fair value of our in-process research and development intangible assets not related to the abandoned project, the Company utilized an average of a discounted cash flow analysis and comparable public company analysis. The key assumptions associated with determining the estimated fair value for both asset groups include projected future revenue growth rates, earnings before interest, taxes, depreciation and amortization ("EBITDA") margins, the terminal growth rate, and the discount rate. As a result of the changes in these assumptions in addition to the abandonment of the aforementioned in-process research and development project, we recognized a $67.4 million non-cash impairment charge during the year-ended December 31, 2022 in the line item *Asset impairment charges* in the Company's Consolidated Statements of Operations, which represents full impairment of the carrying value of the Company's in-process research and development intangible asset.

In order to determine the fair value of the acquired technology, customer relationships, tradename, and non-compete definite-lived intangible assets, the Company utilized the excess earnings approach, distributor method, relief from royalty method, and with and without approach, respectively. The key assumptions associated with determining the estimated fair value include (i) the amount and timing of projected future cash flows (including revenue and expenses), (ii) the discount rate selected to measure the risks inherent in the future cash flows, (iii) the assessment of the asset's life cycle, and (iv) the competitive trends impacting the asset. As a result of the analysis, we recognized non-cash impairment charges of $14.1 million, $6.2 million, $21.9 million, and $0.8 million during the year-ended December 31, 2022 for the acquired technology, customer relationships, tradename, and non-compete definite-lived intangible assets, respectively, in the line item *Asset impairment charges* in the Company's Consolidated Statements of Operations, which represents the difference between the estimated fair value of the Company's definite-lived intangible assets and their carrying values.

3. Fair value measurement

In accordance with FASB ASC Topic 820, *Fair Value Measurements and Disclosures*, ("ASC Topic 820"), the Company measures its financial instruments at fair value on a recurring basis. The carrying values of certain of our financial instruments including cash and cash equivalents, accounts receivable, accounts payable, and accrued liabilities approximate fair value because of their short maturities. The carrying value of our marketable debt securities, which are accounted for as available-for-sale, are classified within either Level 1 or Level 2 in the fair value hierarchy because we use quoted market prices or alternative pricing sources and models utilizing market observable inputs to determine their fair value. The carrying values of our long-term debt, which is classified within Level 2 in the fair value hierarchy, approximates fair value as our borrowings with lenders are at interest rates that approximate market rates for comparable loans. The fair values of investments and contingent consideration classified as Level 3 were derived from management assumptions. The Company also measures certain assets and liabilities at fair value on a non-recurring basis when applying acquisition accounting. ASC Topic 820 clarifies that fair value is an exit price, representing the amount that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants. As such, fair value is a market-based measurement that should be determined based on assumptions that market participants would use in pricing an asset or liability. As a basis for considering such assumptions, ASC Topic 820 establishes a three-tier value fair hierarchy, which prioritizes the inputs used in measuring fair value as follows:

Level 1 – Observable inputs that reflect quoted prices (unadjusted) in active markets for identical assets or liabilities.

Level 2 – Observable inputs other than quoted prices included in Level 1 for similar assets or liabilities, quoted prices in markets that are not active or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the related assets or liabilities.

Level 3 – Unobservable data points for the asset or liability, and include situations where there is little, if any, market activity for the asset or liability.

The fair value of the SciSafe contingent consideration liability was initially valued based on unobservable inputs using a Monte Carlo simulation. These inputs included the estimated amount and timing of projected future revenue, a discount rate of 4.5%, a risk-free rate of approximately 0.2%, asset volatility of 60%, and revenue volatility of 15%. Significant changes in any of those inputs in isolation would result in significant changes in fair value measurement. Generally, changes used in the assumptions for projected future revenue and revenue volatility would be accompanied by a directionally similar change in the fair value measurement. Conversely, changes in the discount rate would be accompanied by a directionally opposite change in the related fair value measurement. However, due to the contingent consideration having a maximum payout amount, changes in these assumptions would not affect the fair value of the contingent consideration if they vary beyond certain amounts. At the acquisition date, the contingent consideration was determined to have a fair value of $3.7 million. Subsequent to the acquisition date, the contingent consideration liability was re-measured to fair value with changes recorded in the *Change in fair value of contingent consideration* line item in the Consolidated Statements of Operations.

During the most recent re-measurement of the contingent consideration liability as of December 31, 2023, the Company determined it appropriate to write-off the remaining balance of the SciSafe contingent consideration liability. The target revenue required for earnout was not met during the year ended December 31, 2023 and has been determined to not be probable to achieve in future years. This contingent consideration liability was included in the Consolidated Balance Sheets as of December 31, 2022 in the amount of $4.3 million. The changes in fair value of contingent consideration of $2.1 million and $5.6 million associated with this liability are included within the Change in Fair Value of Contingent Consideration in the Consolidated Statements of Operations for the years ended December 31, 2023 and 2022, respectively.

There were no remeasurements to fair value during the year ended December 31, 2023 of financial assets and liabilities that are not measured at fair value on a recurring basis.

The following tables set forth the Company's financial assets and liabilities measured at fair value on a recurring basis as of December 31, 2023 and 2022, based on the three-tier fair value hierarchy:

(In thousands)

As of December 31, 2023	**Level 1**	**Level 2**	**Level 3**	**Total**
Assets:				
Cash equivalents:				
Money market accounts	$ 25,034	$ —	$ —	$ 25,034
Available-for-sale securities:				
U.S. government securities	5,170	—	—	5,170
Corporate debt securities	—	9,674	—	9,674
Other debt securities	—	1,992	—	1,992
Total	30,204	11,666	—	41,870

As of December 31, 2022	**Level 1**	**Level 2**	**Level 3**	**Total**
Assets:				
Cash equivalents:				
Money market accounts	$ 11,416	$ —	$ —	$ 11,416
Available-for-sale securities:				
U.S. government securities	15,051	—	—	15,051
Corporate debt securities	—	26,047	—	26,047
Other debt securities	—	3,494	—	3,494
Total	26,467	29,541	$ —	56,008
Liabilities:				
Contingent consideration - business combinations	—	—	4,456	4,456
Total	$ —	$ —	$ 4,456	$ 4,456

There have been no transfers of assets or liabilities between the fair value measurement levels.

The following table presents the changes in fair value of contingent consideration liabilities which are measured using Level 3 inputs for the years ended December 31, 2023, 2022, and 2021:

	Year Ended December 31,		
(In thousands)	**2023**	**2022**	**2021**
Balance at beginning of period	$ 4,456	$ 10,027	$ 7,152
Change in fair value recognized in net loss	(2,193)	(4,754)	2,875
Payment of contingent consideration earned	(2,263)	(817)	—
Balance at end of period	$ —	$ 4,456	$ 10,027

The following table presents the changes in fair value of warrant liabilities which are measured using Level 3 inputs for the year ended December 31, 2021:

(In thousands)	**2021**
Balance at beginning of period	2,780
Exercised warrants	(2,901)
Change in fair value recognized in net loss	121
Balance at end of period	$ —

There was no warrant liability activity as of December 31, 2023 and 2022.

4. Investments

Available-for-sale securities

The Company's portfolio of available-for-sale marketable securities consists of the following:

	December 31, 2023			
		Gross unrealized		
(In thousands)	**Amortized Cost**	**Gains**	**Losses**	**Estimated Fair Value**
Available-for-sale securities, current portion				
U.S. government securities	$ 5,169	$ 1	$ —	$ 5,170
Corporate debt securities	9,673	5	(4)	9,674
Other debt securities	1,443	1	—	1,444
Total short-term	16,285	7	(4)	16,288
Available-for-sale securities, long-term				
Other debt securities	545	3	—	548
Total available-for-sale securities	$ 16,830	$ 10	$ (4)	$ 16,836

(In thousands)	**Amortized Cost**	**Estimated Fair Value**
Due in one year or less	$ 16,285	$ 16,288
Due after one year through five years	545	548
Total	$ 16,830	$ 16,836

There were no outstanding available-for-sale marketable securities as of December 31, 2022.

As of December 31, 2023, none of our available-for-sale marketable securities exhibited risk of credit loss and therefore no allowance for credit losses was recorded.

Equity investments

The Company periodically invests in non-marketable equity securities of private companies without a readily determinable fair value to promote business and strategic objectives. The non-marketable equity securities are carried at cost minus impairment, if any, plus or minus changes resulting from observable process changes in orderly transactions for identical or similar investments of the same issuer. These securities included Series A-1 and A-2 Preferred Stock in iVexSol, Inc. with a fair value of $4.1 million as of December 31, 2023 and December 31, 2022, and Series E Preferred Stock in PanTHERA CryoSolutions, Inc. with a fair value of $995,000 as of December 31, 2023 and December 31, 2022.

5. Inventories

Inventories consist of the following as of December 31, 2023 and 2022:

(In thousands)	**2023**	**2022**
Raw materials	$ 26,219	$ 20,950
Work in progress	7,128	5,680
Finished goods	10,109	8,274
Total	$ 43,456	$ 34,904

During the year ended December 31, 2023, the Company recorded a $5.7 million inventory write-down for potentially unusable products. The products consisted of slow moving inventory, product defects, and supplier defects in raw materials.

6. Leases

We have various operating lease agreements for office space, warehouses, manufacturing, and production locations as well as vehicles and other equipment. Our real estate leases had original lease terms of three to eleven years and remaining lease terms of one to eight years. We exclude options that are not reasonably certain to be exercised from our lease terms, ranging from one to five years. Our lease payments consist primarily of fixed rental payments for the right to use the underlying leased assets over the lease terms, with all other lease payments consisting of variable lease costs. For certain leases, we receive incentives from our landlords, such as rent abatements, which effectively reduce the total lease payments owed for these leases. Vehicle and other equipment operating leases had original lease terms of four and five years and have remaining lease terms between one and five years.

Our financing leases relate to research equipment, machinery, and other equipment.

The table below presents certain information related to the weighted average discount rate and weighted average remaining lease term for the Company's leases as of December 31, 2023 and 2022:

	2023	**2022**
Weighted average discount rate - operating leases	4.3 %	4.2 %
Weighted average discount rate - finance leases	8.3 %	6.1 %
Weighted average remaining lease term in years - operating leases	6.4	7.2
Weighted average remaining lease term in years - finance leases	4.1	2.0

The components of lease expense for the years ended December 31, 2023, 2022, and 2021 were as follows:

	Year Ended December 31,		
(In thousands)	**2023**	**2022**	**2021**
Operating lease costs	$ 3,515	$ 3,701	$ 2,817
Financing lease costs	420	174	166
Short-term lease costs	2,037	2,141	1,727
Total operating lease costs	5,972	6,016	4,710
Variable lease costs	1,292	1,104	749
Total lease expense	$ 7,264	$ 7,120	$ 5,459

Maturities of our lease liabilities as of December 31, 2023 are as follows:

(In thousands)	**Operating Leases**	**Financing Leases**
2024	$ 3,400	$ 487
2025	2,960	424
2026	2,655	389
2027	2,280	386
2028	2,042	134
Thereafter	4,896	—
Total lease payments	18,233	1,820
Less: interest	(2,231)	(275)
Total present value of lease liabilities	$ 16,002	$ 1,545

7. Assets held for rent

Assets held for rent consist of the following as of December 31, 2023 and 2022:

(In thousands)	**2023**	**2022**
Shippers placed in service	$ 9,866	$ 7,671
Fixed assets held for rent	1,468	4,686
Accumulated depreciation	(6,272)	(4,952)
Net	5,062	7,405
Shippers and related components in production	2,651	1,659
Total	$ 7,713	$ 9,064

Shippers and related components in production include shippers complete and ready to be deployed and placed in service upon a customer order, shippers in the process of being assembled, and components available to build shippers. We recognized $3.5 million, $3.5 million, and $1.9 million in depreciation expense related to assets held for rent during the years ended December 31, 2023, 2022, and 2021, respectively.

8. Property and equipment

Property and equipment consist of the following as of December 31, 2023 and 2022:

(In thousands)	2023	2022
Property and equipment		
Leasehold improvements	$ 5,913	$ 5,249
Furniture and computer equipment	820	1,908
Manufacturing and other equipment	19,893	20,557
Construction in-progress	3,953	5,095
Subtotal	30,579	32,809
Less: Accumulated depreciation	(9,502)	(9,171)
Property and equipment, net	$ 21,077	$ 23,638

Depreciation expense for property and equipment was $3.6 million, $3.3 million, and $2.9 million for the years ended December 31, 2023, 2022, and 2021, respectively.

9. Accrued expenses and other current liabilities

Accrued expenses and other current liabilities consist of the following as of December 31, 2023 and 2022:

(In thousands)	2023	2022
Accrued expenses	$ 6,909	$ 3,128
Accrued taxes	562	975
Accrued compensation	3,800	5,080
Deferred revenue, current	661	548
Other	—	51
Total accrued expenses and other current liabilities	$ 11,932	$ 9,782

10. Warranty reserve liability

We reserve estimated exposures on known claims, as well as on a portion of anticipated claims, for product warranty and rework cost, based on historical product liability claims. Claim costs are deducted from the accrual when paid. Factors that could have an impact on the warranty accrual in any given period include the following: changes in manufacturing quality, changes in product costs, changes in product mix and any significant changes in sales volume.

A rollforward of our warranty liability is as follows:

(In thousands)	2023	2022	2021
Balance at beginning of period	$ 8,312	$ 9,398	$ 212
Warranty reserve acquired in the acquisition of Global Cooling	—	—	3,353
Provision for warranties[1]	3,351	4,463	10,989
Settlements of warranty claims[1]	(3,805)	(5,549)	(5,156)
Balance at end of period	$ 7,858	$ 8,312	$ 9,398

(1) Both the Provision for warranties and Settlements of warranty claims balances include reclassifications of $1.6 million and $1.1 million for the years ended December 31, 2022 and 2021, respectively, to reflect changes in warranty utilization on pre-existing claims.

11. Goodwill and intangible assets

Goodwill

The following table represents the components of the carrying value of goodwill for the year ended December 31, 2023:

(In thousands)	Goodwill
Balance as of December 31, 2020	$ 58,449
Goodwill related to Global Cooling acquisition	137,822
Goodwill related to Sexton acquisition	28,470
Balance as of December 31, 2023 and 2022	$ 224,741

Intangible assets

Intangible assets, net consisted of the following as of December 31, 2023 and 2022:

(In thousands, except weighted average useful life)	December 31, 2023			
Intangible assets:	Gross Carrying Value	Accumulated Amortization	Net Carrying Value	Weighted Average Useful Life (in years)
Customer Relationships[1]	$ 9,936	$ (4,217)	$ 5,719	10.7
Tradenames[1]	8,134	(2,077)	6,057	11.3
Technology - acquired[1]	18,372	(9,123)	9,249	4.1
Non-compete agreements	750	(626)	124	0.8
Total intangible assets	$ 37,192	$ (16,043)	$ 21,149	7.3

(1) The entirety of the gross carrying values and accumulated amortization of the specified intangible assets above associated with the Freezer Business were impaired during the three months ended September 30, 2023. Refer to Note 2: *Impairment of property and equipment and definite-lived intangible assets* for more information on the assessed non-cash impairment charges.

	December 31, 2022			
Intangible assets:	Gross Carrying Value[1]	Accumulated Amortization[1]	Net Carrying Value	Weighted Average Useful Life (in years)[1]
Customer Relationships	$ 10,496	$ (3,328)	$ 7,168	8.8
Tradenames	11,328	(1,794)	9,534	11.8
Technology - acquired	23,802	(8,705)	15,097	5.3
Non-compete agreements	750	(461)	289	1.8
Total intangible assets	$ 46,376	$ (14,288)	$ 32,088	8.0

(1) Both the Gross Carrying Value and Accumulated Amortization balances as of December 31, 2022 contain immaterial adjustments to reflect impairments taken during the year ended December 31, 2022 on each of the intangible asset classes presented here. Each intangible asset class was adjusted as follows: Customer relationships: $0.8 million; Tradenames: $2.4 million, Technology - acquired: $4.1 million, Non-compete agreements: $0.4 million. The Weighted Average Useful Life was additionally adjusted to reflect the updated balances subsequent to the impairment charges.

Impairment expense for both finite and indefinite-lived intangible assets was $5.8 million, $110.4 million, and zero for the years ended December 31, 2023, 2022, and 2021, respectively. Amortization expense for finite-lived intangible assets was

$5.2 million, $9.7 million, and $8.2 million for the years ended December 31, 2023, 2022, and 2021, respectively. As of December 31, 2023, the Company expects to record the following amortization expense:

(In thousands)

For the Years Ending December 31,	Estimated Amortization Expense
2024	$ 3,602
2025	3,468
2026	3,358
2027	2,605
2028	1,500
Thereafter	6,616
Total	$ 21,149

12. Commitments and contingencies

Employment agreements

We have employment agreements with certain key employees. None of these employment agreements is for a definitive period, but rather each will continue indefinitely until terminated in accordance with its terms. The agreements provide for a base annual salary, payable in monthly (or shorter) installments. Under certain conditions and for certain of these officers, we may be required to pay additional amounts upon terminating the officer or upon the officer resigning for good reason.

Litigation

From time to time, the Company is subject to various legal proceedings that arise in the ordinary course of business, none of which are currently material to the Company's business. The Company's industry is characterized by frequent claims and litigation, including claims regarding intellectual property. As a result, the Company may be subject to various legal proceedings from time to time. The results of any future litigation cannot be predicted with certainty, and regardless of the outcome, litigation can have an adverse impact on the Company because of defense and settlement costs, diversion of management resources and other factors. Management is not aware of any pending or threatened litigation.

Indemnification

As permitted under Delaware law and in accordance with the Company's bylaws, the Company is required to indemnify its officers and directors for certain errors and occurrences while the officer or director is or was serving in such capacity. The Company is also party to indemnification agreements with its directors. The Company believes the fair value of the indemnification rights and agreements is minimal. Accordingly, the Company has not recorded any liabilities for these indemnification rights and agreements as of December 31, 2023.

Non-income related taxes

Companies are required to collect and remit sales tax from certain customers if the company is determined to have nexus in a particular state. Upon the determination of nexus, which varies by state, companies are additionally required to maintain detailed record of specific product and customer information within each jurisdiction in which it has established nexus to appropriately determine their sales tax liability, requiring technical knowledge of each jurisdiction's tax case law. During the year ended December 31, 2022, the Company determined that a sales tax liability related to the periods of 2019 through 2022 is probable. The estimated liability was determined to be approximately $5.4 million and $3.7 million as of December 31, 2023 and December 31, 2022, respectively. Due to the variety of jurisdictions in which this estimated liability relates to and our ongoing assessment of sales taxes owed, we cannot predict when final liabilities will be satisfied. We will reevaluate the estimated liability and timing of satisfaction each reporting period.

Settlement of Global Cooling Escrow

On May 3, 2021, the Company acquired GCI pursuant to an Agreement and Plan of Merger, dated as of March 19, 2021 (the "GCI Merger Agreement"). Pursuant to the GCI Merger Agreement, the aggregate consideration paid to former stockholders of GCI (collectively, the "GCI Stockholders") was 6,646,870 newly issued shares of common stock (the "GCI Merger Consideration") were provided with the requirement that the GCI Merger Consideration otherwise payable to GCI Stockholders were subject to reduction for indemnification obligations. Approximately 9% of the GCI Merger Consideration (the "GCI Escrow Shares") otherwise issuable to the GCI Stockholders were deposited into a segregated escrow account (the "GCI Escrow Account") in accordance with an escrow agreement entered into in connection with the closing of the transactions contemplated by the GCI Merger Agreement (the "GCI Escrow Agreement"). Of the GCI Escrow Shares, an amount equal to 5% of the GCI Merger Consideration were considered general escrow shares (the "General Escrow Shares"). The General Escrow Shares were eligible to be held in escrow for a period of up to 18 months after the closing of the GCI acquisition as the sole and exclusive source of payment for any indemnification claims made by the Company.

On September 28, 2022, BioLife asserted an indemnification claim pursuant to the GCI Merger Agreement. On June 5, 2023, the Company entered into a Settlement Agreement with the representatives of the GCI Stockholders, pursuant to which the parties agreed to release 65% of the General Escrow Shares, totaling 216,024 shares, to the Company from the GCI Escrow Account. These shares were returned to the Company and subsequently cancelled. As a result of the settlement, the Company recorded a $5.1 million gain recognizing the return of the shares during the second quarter of 2023.

13. Long-term debt

In May 2021, the Company assumed three term notes in the acquisition of Global Cooling. At the time of acquisition, these notes carried aggregate outstanding principal balances of $4.4 million. These term notes bore interest at a floating rate equal to the 3-month LIBOR rate plus 6.50%. The term notes included financial covenants tied to the performance of Global Cooling.

In October 2021, the Company entered into amended and restated term notes for all three term notes with two lenders (the "Global Cooling Term Note Agreements"). The principal amount borrowed pursuant to the Global Cooling Term Note Agreements (the "Global Cooling Term Notes") consisted of an aggregate $4.6 million, with one lender providing two term notes in the amounts of $1.4 million and $1.4 million and a separate lender providing one term note in the amount of $1.8 million. The maturity dates for these notes are July 17, 2024, September 7, 2024, and December 18, 2027, respectively. All three term notes bear interest at a fixed rate of 4%, were interest-only with one balloon principal payment at maturity, and could be pre-paid without penalty at any time. The Company fully extinguished the term notes with maturity dates of September 7, 2024 and July 17, 2024 on September 20, 2022 and July 17, 2023, respectively. All financial covenants included in the original agreements previously in effect were removed by the Global Cooling Term Note Agreements.

On September 20, 2022, the Company and certain of its subsidiaries entered into a term loan agreement (the "Loan Agreement"), which provides for up to $60 million in aggregate principal to be drawn. Principal amounts borrowed pursuant to the Loan Agreement (the "Term Loan") mature on June 1, 2026. The Loan Agreement permitted the Company to borrow up to $30 million upon the initial closing of the transactions contemplated by the Loan Agreement (the "Term Loan Closing"), and provided options to borrow (i) up to $10 million between the Term Loan Closing and June 30, 2023, (ii) up to $10 million upon the achievement of certain revenue milestones by the Company, and (iii) an additional $10 million at the discretion of the lender. The Company borrowed $20 million at the Term Loan Closing and accounts for the Term Loan at cost. As of December 31, 2023, the Company had not drawn additional funding nor had it met the revenue milestones outlined within the Loan Agreement. The Company had until December 31, 2023 to draw an additional $10 million, subject to approval from the lender, and therefore has no additional opportunities under current loan terms to draw upon the Loan Agreement. Payments on the borrowing are interest-only through June 2024, with additional criteria allowing for interest-only payments to continue through June 2025. Tranches borrowed under the term loan agreement bear interest at the Wall Street Journal prime rate plus 0.5%. However, the interest rate is subject to a ceiling that restricts the interest rate for each tranche from exceeding 1.0% above the overall rate applicable to each tranche at their respective funding dates and has a balloon payment due at the earliest of term loan maturity, repayment of the term loan in full, or termination of the loan agreement at $1.2 million. As of December 31, 2023 the implied interest rate of the Term Loan is 6.7% and the implied value of the Term Loan is $20.3 million. The term loan agreement contains customary representations and warranties as well as customary affirmative and negative covenants. As of December 31, 2023, the Company is in compliance with the covenants set forth in the Loan Agreement. In the event that borrowings under the Loan Agreement exceed $20 million, the Company will become subject to financial covenants.

Long-term debt consisted of the following as of December 31, 2023 and 2022:

(In thousands)	Maturity Date	Interest Rate	December 31, 2023	December 31, 2022
Global Cooling Term Notes	Various	4.0 %	2,596	2,896
Term Loan	Jun-26	7.0 %	20,000	20,000
Insurance premium financing	Jul-24	8.3 %	1,348	1,074
Freezer equipment loan	Dec-25	5.7 %	317	466
Manufacturing equipment loans	Oct-25	5.7 %	172	266
Freezer installation loan	Various	6.3 %	807	1,078
Other loans	Various	Various	2	6
Total debt, excluding unamortized debt issuance costs			25,242	25,786
Less: unamortized debt issuance costs			(98)	(179)
Total debt			25,144	25,607
Less: current portion of debt			(6,833)	(1,814)
Total long-term debt			$ 18,311	$ 23,793

The Term Loan is secured by substantially all assets of BioLife, SAVSU, CBS, SciSafe, Global Cooling and Sexton, other than intellectual property. The Global Cooling Term Notes are secured by substantially all assets of Global Cooling and is effectively subordinated to the security interest established by the Loan Agreement. Equipment loans are secured by the financed equipment.

As of December 31, 2023, the scheduled maturities of loans payable for each of the next five years and thereafter were as follows:

(In thousands)	Amount
2024	$ 6,830
2025	10,500
2026	5,218
2027	2,596
2028	—
Thereafter	—
Total	$ 25,144

14. Warrants

As of January 1, 2021, there were 79,100 warrants to purchase the Company's common stock outstanding. In March 2021, all remaining outstanding warrants were exercised via a “cashless” exercise. As a result of the cashless exercise, the Company issued an aggregate of 70,030 shares of Company common stock.

The following table summarizes warrant activity for the year ended December 31, 2021:

	2021	
	Shares	Wtd. Avg. Exercise Price
Outstanding at beginning of year	79,100	$ 4.75
Exercised	(79,100)	4.75
Outstanding and exercisable at end of year	—	$ —

There was no warrant activity during the years ended December 31, 2023 and 2022.

15. Stock-based compensation

Stock compensation plans

Our stock-based compensation programs are long-term retention programs that are intended to attract, retain, and provide incentives for talented employees, officers, and directors, and to align stockholder and employee interests. Compensation expense associated with equity-based awards is recognized on a straight-line basis over the requisite service period, with awards generally vesting over a 4 year period, and forfeitures recognized as incurred. We have the following stock-based compensation plans and programs:

During 2013, we adopted the 2013 Performance Incentive Plan (the “2013 Plan”), which allowed us to grant options or restricted stock awards to all employees, including executive officers, outside consultants and non-employee directors. An aggregate of 3.1 million shares of common stock was initially reserved for issuance under the 2013 Plan. In May 2017, July 2020, June 2021, and June 2022, the shareholders approved an increase in the number of shares available for issuance to 4.1 million shares, 5.0 million shares, 6.5 million shares, and 8.5 million shares, respectively. As of April 25, 2023, the 2013 Plan expired as to future awards in accordance with its terms. As of December 31, 2023, there were outstanding options to purchase 217,000 shares of the Company’s common stock and 1.6 million unvested restricted stock awards outstanding under the 2013 Plan.

On July 21, 2023, our stockholders approved the 2023 Omnibus Performance Incentive Plan (the "2023 Plan"). The 2023 Plan allows us to grant equity awards to employees, directors, and outside consultants. An aggregate of 4.2 million shares of common stock were initially reserved for issuance under the 2023 Plan, plus any shares subject to awards under the 2013 Plan that were outstanding as of July 21, 2023, and which are subsequently forfeited or lapsed and not issued under the 2013 Plan. As of December 31, 2023, there were 1.2 million unvested restricted stock awards outstanding under the 2023 Plan.

Issuance of shares

When options and warrants are exercised, it is the Company’s policy to issue new shares.

Stock option activity

Service vesting-based stock options

The following is a summary of service vesting-based stock option activity for the year ended December 31, 2023 and 2022, and the status of service vesting-based stock options outstanding as of December 31, 2023 and 2022:

	2023		2022	
	Shares	Wtd. Avg. Exercise Price	Shares	Wtd. Avg. Exercise Price
Outstanding as of beginning of year	456,293	$ 2.17	624,531	$ 2.13
Exercised	(239,043)	2.12	(161,646)	2.00
Expired	—	—	(6,592)	3.22
Outstanding at end of year	217,250	$ 2.21	456,293	$ 2.17
Stock options exercisable at year end	217,250	$ 2.21	456,293	$ 2.17

We did not recognize stock compensation expense related to service-based options during the years ended December 31, 2023 and 2022. We recognized $25,000 in stock compensation expense related to service-based options during the year ended December 31, 2021. As of December 31, 2023, there was $3.1 million of aggregate intrinsic value of outstanding service vesting-based stock options, including $3.1 million of aggregate intrinsic value of exercisable service vesting-based stock options. Intrinsic value is the total pretax intrinsic value for all “in-the-money” options (i.e., the difference between the Company’s closing stock price on the last trading day of the year and the exercise price, multiplied by the number of

shares) that would have been received by the option holders had all option holders exercised their options on December 31, 2023. This amount will change based on the fair market value of the Company's stock. Intrinsic value of service vesting-based awards exercised during the years ended December 31, 2023, 2022, and 2021 was $3.9 million, $4.1 million, and $6.9 million, respectively. There were no service based-vesting options granted during the years ended December 31, 2023, 2022, and 2021. The weighted average remaining contractual life of service vesting-based options outstanding and exercisable as of December 31, 2023 is 2.1 years. There were no unrecognized compensation costs for service vesting-based stock options as of December 31, 2023.

The following table summarizes information about service vesting-based stock options outstanding as of December 31, 2023:

Range of Exercise Prices	Number Outstanding at December 31, 2023	Weighted Average Remaining Contractual Life	Weighted Average Exercise Price
$1.00 - 1.50	2,000	2.85	$ 1.49
$1.51 - 2.00	116,500	2.32	1.89
$2.01 - 2.50	84,500	1.36	2.07
$2.51 - 8.60	14,250	3.92	5.69
	217,250	2.06	$ 2.21

Performance-based stock options

There was no performance-based stock option grant activity during the year ended December 31, 2023.

No stock compensation expense was recognized during the years ended December 31, 2023, 2022, and 2021 related to performance-based options. The intrinsic value of performance-based awards exercised during the years ending December 31, 2023, 2022, and 2021 was zero, zero, and $27.4 million, respectively. There were no stock options granted to employees and non-employee directors in the years ending December 31, 2023, 2022, and 2021.

Restricted stock

Service vesting-based restricted stock

The following is a summary of service vesting-based restricted stock activity for the years ended December 31, 2023 and 2022, and the status of unvested service vesting-based restricted stock outstanding as of December 31, 2023 and 2022:

	2023		2022	
	Shares	Wtd. Avg. Grant Date Fair Value	Shares	Wtd. Avg. Grant Date Fair Value
Outstanding as of beginning of year	1,879,215	$ 28.94	1,212,783	$ 37.48
Granted	1,907,101	13.12	1,373,909	25.26
Vested	(1,237,221)	24.97	(569,535)	35.51
Forfeited	(236,197)	25.88	(137,942)	40.19
Non-vested at year end	2,312,898	$ 18.32	1,879,215	$ 28.94

On November 4, 2021, the Board of Directors approved to modify certain restricted stock awards that were awarded to one executive that otherwise would have expired upon the executive's intended retirement in early 2023. The modification accelerated the vesting of the awards to vest equally over four quarters in the year ended December 31, 2022. We recorded incremental stock-based compensation expense of $666,000 in the year ended December 31, 2021 for this stock option modification.

The aggregate fair value of the service vesting-based awards granted during the years ended December 31, 2023, 2022, and 2021 was $25.0 million, $34.7 million, and $37.8 million, respectively. The aggregate fair value of the service vesting-

based awards that vested during the years ended December 31, 2023, 2022, and 2021 was $20.5 million, $12.6 million, and $15.9 million, respectively.

On October 19, 2023, Michael Rice, the Chief Executive Officer at that time, announced his resignation from the company. In accordance with his separation agreement, all unvested stock grants, excluding the 99,038 market-based restricted stock units awarded to him January 3, 2023 and the 70,094 market-based restricted stock units awarded to him on February 24, 2022 by the board of directors, were accelerated and vested as of the date of his separation. The Company recognized stock compensation expense in connection with the acceleration of his unvested stock grants of $1.7 million, representing 150,155 shares.

During the months of August through December 2023, our board of directors granted 22,675 restricted stock units in lieu of salary for executive leadership. The awards vested in full on the date of grant, regardless of employment status on that date. Salary expenses incurred in connection with the restricted stock units awarded in lieu of salary totaled $0.2 million. For all specific grant information related to these awards, refer to the *Equity Incentive Compensation* discussion of Part III within this filing.

During the months of May through August 2022, our board of directors granted 21,566 restricted stock awards in lieu of salary for executive leadership. The awards vested in full on the date of grant, regardless of employment status on that date. All expenses related to these awards were incurred in the year ended December 31, 2022.

We recognized stock compensation expense of $25.2 million, $21.0 million, and $12.7 million related to service vesting-based awards during the years ended December 31, 2023, 2022, and 2021, respectively. As of December 31, 2023, there was $37.8 million in unrecognized compensation costs related to service vesting-based awards. We expect to recognize those costs over 2.7 years.

Market-based restricted stock

The following is a summary of market-based restricted stock activity under our stock option plan for the years ended December 31, 2023 and 2022 and the status of market-based restricted stock outstanding as of December 31, 2023 and 2022:

	2023		2022	
	Shares	Wtd. Avg. Grant Date Fair Value	Shares	Wtd. Avg. Grant Date Fair Value
Outstanding as of beginning of year	271,044	$ 30.64	139,756	$ 19.86
Granted	268,738	24.23	349,568	22.66
Vested	(30,616)	51.65	(218,280)	10.95
Non-vested at year end	509,166	$ 26.00	271,044	$ 30.64

On March 25, 2020, the Company granted 109,140 shares of market-based stock to its executives in the form of restricted stock. The shares granted contain a market condition based on TSR. The TSR market condition measures the Company's performance against a peer group. On February 24, 2022, the Company determined the TSR attainment was 200% of the targeted shares, resulting in 109,140 shares being granted and 218,280 shares vesting to current employees of the Company based on our total shareholder return during the period beginning on January 1, 2020 through December 31, 2021 as compared to the total shareholder return of 20 of our peers. The market-based restricted stock awards will vest as to between 0% and 200% of the number of restricted shares granted to each recipient based on our total shareholder return during the period beginning on January 1, 2020 through December 31, 2021 as compared to the total shareholder return of 20 of our peers. The fair value of this award was determined at the grant date using a Monte Carlo simulation with the following assumptions: a historical volatility of 78%, 0% dividend yield and a risk-free interest rate of 0.3%. The historical volatility was based on the most recent 2-year period for the Company and correlated with the components of the peer group. The stock price projection for the Company and the components of the peer group assumes a 0% dividend yield. This is mathematically equivalent to reinvesting dividends in the issuing entity over the performance period. The risk-free interest is based on the yield on the U.S. Treasury Strips as of the Measurement Date with a maturity consistent with the 2-year term associated with the market condition of the award. The fair value of this award of $1.2 million was expensed on a straight-line basis over the grant date to the vesting date of December 31, 2021.

On February 8, 2021, the Company granted 30,616 shares of market-based stock to its executives in the form of restricted stock. The shares granted contain a market condition based on TSR. The TSR market condition measures the Company's performance against a peer group. On January 3, 2023, the Company determined the TSR attainment was 100% of the targeted shares, resulting in 30,616 shares being granted and 30,616 shares vesting to current employees of the Company based on our total shareholder return during the period beginning on January 1, 2021 through December 31, 2022 as compared to the total shareholder return of 20 of our peers. The market-based restricted stock awards will vest as to between 0% and 200% of the number of restricted shares granted to each recipient based on our total shareholder return during the period beginning on January 1, 2021 through December 31, 2023 as compared to the total shareholder return of 20 of our peers. The fair value of this award was determined using a Monte Carlo simulation with the following assumptions: a historical volatility of 68%, 0% dividend yield, and a risk-free interest rate of 0.1%. The historical volatility was based on the most recent 2-year period for the Company and correlated with the components of the peer group. The stock price projection for the Company and the components of the peer group assumes a 0% dividend yield. This is mathematically equivalent to reinvesting dividends in the issuing entity over the performance period. The risk-free interest rate is based on the yield on the U.S. Treasury Strips as of the Measurement Date with a maturity consistent with the 2-year term associated with the market condition of the award. The fair value of this award of $1.3 million is being expensed on a straight-line basis over the grant date to the vesting date of December 31, 2022.

On February 24, 2022, the Company granted 240,428 shares of market-based stock to its executives in the form of restricted stock. The shares granted contain a market condition based on TSR. The TSR market condition measures the Company's performance against a peer group. The market-based restricted stock awards will vest as to between 0% and 200% of the number of restricted shares granted to each recipient based on our total shareholder return during the period beginning on January 1, 2022 through December 31, 2023 as compared to the total shareholder return of 20 of our peers. The fair value of this award was determined using a Monte Carlo simulation with the following assumptions: a historical volatility of 63%, 0% dividend yield, and a risk-free interest rate of 1.5%. The historical volatility was based on the most recent 2-year period for the Company and correlated with the components of the peer group. The stock price projection for the Company and the components of the peer group assumes a 0% dividend yield. This is mathematically equivalent to reinvesting dividends in the issuing entity over the performance period. The risk-free interest rate is based on the yield on the U.S. Treasury Strips as of the Measurement Date with a maturity consistent with the 2-year term associated with the market condition of the award. The fair value of this award of $6.7 million is being expensed on a straight-line basis over the grant date to the vesting date of December 31, 2023.

On January 3, 2023, the Company granted 268,738 shares of market-based stock to its executives in the form of restricted stock. The shares granted contain a market condition based on TSR. The TSR market condition measures the Company's performance against a peer group. The market-based restricted stock awards will vest as to between 0% and 200% of the number of restricted shares granted to each recipient based on our total shareholder return during the period beginning on January 1, 2023 through December 31, 2024 as compared to the total shareholder return of 20 of our peers. The fair value of this award was determined using a Monte Carlo simulation with the following assumptions: a historical volatility of 78%, 0% dividend yield, and a risk-free interest rate of 4.4%. The historical volatility was based on the most recent 2-year period for the Company and correlated with the components of the peer group. The stock price projection for the Company and the components of the peer group assumes a 0% dividend yield. This is mathematically equivalent to reinvesting dividends in the issuing entity over the performance period. The risk-free interest rate is based on the yield on the U.S. Treasury Strips as of the Measurement Date with a maturity consistent with the 2-year term associated with the market condition of the award. The fair value of this award of $6.8 million is being expensed on a straight-line basis over the grant date to the vesting date of December 31, 2024.

We recognized stock compensation expense of $6.5 million, $4.3 million, and $1.4 million related to market-based restricted stock awards for the years ended December 31, 2023, 2022, and 2021. As of December 31, 2023, there was $3.3 million in unrecognized non-cash compensation costs related to market-based restricted stock awards expected to vest. We expect to recognize those costs over 1 year.

The aggregate fair value of the market-based awards granted during the years ended December 31, 2023, 2022, and 2021 was $6.5 million, $6.7 million, and $1.8 million, respectively. The aggregate fair value of the market-based awards that vested during the years ended December 31, 2023, 2022, and 2021 was $0.7 million, $5.0 million, and $10.2 million, respectively.

Total stock compensation expense

We recorded total stock compensation expense for the years ended December 31, 2023, 2022, and 2021, as follows:

	2023	2022	2021
Research and development costs	$ 5,631	$ 3,176	$ 1,906
Sales and marketing costs	5,620	3,649	1,788
General and administrative costs	14,937	14,066	8,061
Cost of revenue	5,482	4,443	2,201
Total	$ 31,670	$ 25,334	$ 13,956

16. Income taxes

The following are the domestic and foreign components of the Company's loss before income taxes:

	Year Ended December 31,		
(In thousands)	**2023**	**2022**	**2021**
Domestic	$ (67,296)	$ (146,091)	$ (28,590)
Foreign	1,038	1,264	(436)
Total	$ (66,258)	$ (144,827)	$ (29,026)

Income tax expense (benefit) consists of the following:

	Year Ended December 31,		
(In thousands)	**2023**	**2022**	**2021**
Current:			
Federal	$ —	$ —	$ —
State	46	11	—
Foreign	185	205	9
Total current tax provision	231	216	9
Deferred:			
Federal	(62)	(2,924)	(17,703)
State	—	(2,314)	(2,424)
Foreign	—	—	—
Total deferred tax benefit	(62)	(5,238)	(20,127)
Income tax expense (benefit)	$ 169	$ (5,022)	$ (20,118)

In the year ended December 31, 2021, income tax benefit included excess tax benefits from stock-based compensation of $10.5 million. The tax benefit for the years ended December 31, 2023 and 2022 did not contain excess tax benefits from stock-based compensation.

In connection with the 2021 Global Cooling acquisition, the Company recognized a deferred tax liability estimated to be $24.1 million. As a result, the Company recorded an income tax benefit of $8.0 million for the release of valuation allowance on our existing U.S. deferred tax assets as a result of the offset of the deferred tax liabilities established for intangible assets from the acquisition. In connection with the 2021 Sexton acquisition, the Company recorded a deferred tax liability estimated to be $1.5 million with an offset to goodwill.

A reconciliation of income taxes computed using the U.S. federal statutory rate to that reflected in operations follows:

	Year Ended December 31,		
	2023	2022	2021
Federal statutory tax	21 %	21 %	21 %
State tax, net of federal benefit	4 %	3 %	7 %
Stock compensation	(2 %)	—	36 %
Sec. 162(m) limitation on executive compensation	(2 %)	(1 %)	(11 %)
Fair value change in contingent consideration	1 %	1 %	(2 %)
Transaction costs	—	—	(1 %)
Gain on stock acquisition	—	—	5 %
Tax credits	1 %	1 %	—
Change in valuation allowance	(25 %)	(21 %)	20 %
Expired net operating losses	—	—	(5 %)
Gain on escrow settlement	2 %	—	— %
Other	—	—	(1 %)
Total	—	4 %	69 %

The principal components of the Company's net deferred tax assets are as follows as of December 31, 2023 and 2022:

(In thousands)	**2023**	**2022**
Deferred tax assets related to:		
Net operating loss carryforwards	$ 35,505	$ 29,102
Stock-based compensation	3,008	3,207
Accruals and reserves	3,590	3,724
Inventory	1,408	425
Fixed assets	585	—
Lease liabilities	3,950	3,653
Tax credit carryforward	2,226	1,423
Capitalized research and development	4,818	2,405
Other	875	445
Total deferred tax assets	55,965	44,384
Deferred tax liabilities related to:		
Intangibles	(3,696)	(6,150)
Right-of-use assets	(2,500)	(3,458)
Fair value change in investments	(440)	(447)
Fixed assets	—	(1,177)
Total deferred tax liabilities	(6,636)	(11,232)
Net deferred tax (liabilities) assets before valuation allowance	49,329	33,152
Less: valuation allowance	(49,517)	(33,402)
Net deferred tax liabilities	$ (188)	$ (250)

Realization of deferred tax assets is dependent upon the generation of future taxable income, if any, the timing and amount of which are uncertain. The assessment regarding whether a valuation allowance is required on deferred tax assets considers the evaluation of both positive and negative evidence when concluding whether it is more likely than not that

deferred tax assets are realizable. The valuation allowance recorded as of December 31, 2023 and 2022 primarily relates to deferred tax assets for net operating loss carryforwards.

The changes in the valuation allowance for deferred tax assets were as follows:

(In thousands)	2023	2022	2021
Balance at beginning of period	$ 33,402	$ 2,993	$ 8,498
Deferred tax liabilities assumed through acquisitions	—	—	(8,498)
Charged to income tax expense	16,115	30,409	2,993
Balance at end of period	$ 49,517	$ 33,402	$ 2,993

As of December 31, 2023, the Company had U.S. federal net operating loss ("NOL") carryforwards of approximately $151.9 million. Approximately $39.2 million of NOL will expire from 2024 through 2037, and approximately $112.7 million of NOL will be carried forward indefinitely. The NOL carryforwards may become subject to an annual limitation in the event of certain cumulative changes in the ownership interest. This limited the amount of tax attributes that can be utilized annually to offset future taxable income or tax liabilities. Subsequent ownership changes may further affect the limitation in future years.

The Tax Cuts and Jobs Act contained a provision which requires the capitalization of Section 174 costs incurred in years beginning on or after January 1, 2022. Section 174 costs are expenditures which represent research and development costs that are incident to the development or improvement of a product, process, formula, invention, computer software, or technique. This provision changes the treatment of Section 174 costs such that the expenditures are no longer allowed as an immediate deduction but rather must be capitalized and amortized. We have included the impact of this provision, which results in a deferred tax asset of approximately $4.8 million as of December 31, 2023.

The Company determines its uncertain tax positions based on a determination of whether and how much of a tax benefit taken by the Company in its tax filings or positions is more likely than not to be sustained upon examination by the relevant income tax authorities.

A reconciliation of the beginning and ending balances of uncertain tax positions in the years ended December 31, 2023 and 2022 is as follows:

(In thousands)	2023	2022
Balance at beginning of period	$ 610	$ 255
Increase related to prior year tax positions	20	170
Increase related to current year tax positions	324	185
Balance at end of period	$ 954	$ 610

The Company is generally subject to examination by U.S. federal and local income tax authorities for all tax years in which loss carryforward is available, which includes 2004 through 2023.

17. Acquisitions

Sexton acquisition

General terms and effects

On August 9, 2021, BioLife entered into an Agreement and Plan of Merger (the "Sexton Merger Agreement") with BLFS Merger Sub, Inc., a Delaware corporation ("Sexton Merger Sub"), Fortis Advisors LLC, in its capacity as the representative of the stockholders of Sexton (the "Sexton Seller Representative") and Sexton, a Delaware corporation. The acquisition strengthens BioLife's offerings in the cell and gene therapy and broader biopharma markets.

On September 1, 2021, the Company completed the merger of Sexton Merger Sub with and into Sexton and Sexton became a wholly owned subsidiary of the Company (the "Sexton Merger"). As consideration for the Sexton Merger (the "Sexton Merger Consideration"), holders of common stock, preferred stock and options of Sexton, other than the Company

(collectively, the "Sexton Participating Holders"), are entitled to receive an aggregate of 530,502 newly issued shares of the Company's common stock, subject to certain post-closing adjustments, of which 477,452 shares of Common Stock were issued to the Sexton Participating Holders at the Closing, and 53,050 shares of Common Stock, or approximately 10% of the Merger consideration, were deposited into an escrow account for indemnification and post-closing purchase price adjustment purposes. Prior to the merger, the Company held preferred stock in Sexton, which was accounted for using a measurement alternative that measures the securities at cost minus impairment, if any, plus or minus changes resulting from observable process changes in orderly transactions for identical or similar investments of the same issuer. The Company accounted for the merger as a step acquisition, which required remeasurement of the Company's existing ownership in Sexton to fair value prior to completing the acquisition method of accounting. Using step acquisition accounting, the Company increased the value of its existing equity interest to its fair value, resulting in the recognition of a non-cash gain of $6.5 million, which was included in the gain on acquisition of Sexton Biotechnologies, Inc. in the Consolidated Statements of Operations for the year ended December 31, 2021. The Company utilized a market-based valuation approach to determine the fair value of the existing equity interest based on the total merger consideration offered and the Company's stock price at acquisition.

Total consideration transferred (in thousands, except number of shares and stock price):

Merger consideration shares		530,502
BioLife stock price (as of September 1, 2021)	$	60.50
Value of issued shares	$	32,095
plus: Fair value of BioLife's existing investment in Sexton	$	7,951
less: Net working capital adjustment	$	(118)
Merger Consideration	$	39,928

Transaction costs related to the acquisition are expensed as incurred and are not included in the calculation of consideration transferred.

Fair value of net assets acquired

Under the acquisition method of accounting, the assets acquired and liabilities assumed from Sexton were calculated as of the merger date, at their respective fair values, and consolidated with those of BioLife. The gross contractual accounts receivable acquired in the acquisition was $509,000. Of the acquired accounts receivable, $17,000 is estimated to be uncollectible. The fair value calculations required critical estimates, including, but not limited to, future expected cash flows, revenue and expense projections, discount rates, revenue volatility, and royalty rates.

The table below represents the fair value of the net assets acquired and liabilities assumed, which were recorded as of the merger date (amounts in thousands).

Cash	$	1,516
Accounts receivable, net		492
Inventory		1,310
Prepaid expenses and other current assets		670
Property, plant and equipment, net		737
Operating lease right-of-use assets, net		470
Developed technology		4,132
Customer relationships		2,276
Tradenames		2,324
Non-compete agreements		90
Goodwill		28,470
Accounts payable		(291)
Lease liabilities, operating		(470)
Deferred tax liability		(1,482)
Other liabilities		(316)
Fair value of net assets acquired	**$**	**39,928**

We recorded a measurement period adjustment in the fourth quarter of the year ended December 31, 2021 of $198,000 to the fair value of goodwill and the deferred tax liability. This adjustment related to the tax attributes of the business combination.

The fair value of Sexton's identifiable intangible assets and useful lives are as follows (amounts in thousands, except years):

		Fair Value	Useful Life (Years)
Developed technology	$	4,132	5 - 9
Customer relationships		2,276	2
Tradenames		2,324	11
Non-compete agreements		90	1
Total identifiable intangible assets	**$**	**8,822**	

Fair value measurement methodologies used to calculate the value of any asset can be broadly classified into one of three approaches, referred to as the cost, market and income approaches. In any fair value measurement analysis, all three approaches must be considered, and the approach or approaches deemed most relevant will then be selected for use in the fair value measurement of that asset. The estimated fair values of developed technology were estimated using a multi-period excess earnings approach. The estimated fair values of customer relationships and non-compete agreements were estimated using a "with and without" approach, comparing projected cash flows under scenarios assuming the customer relationships and non-compete agreements were and were not in place. The estimated fair value of the tradenames is based on the relief from royalty method, which estimates the value of the trade names based on the hypothetical royalty payments that are saved by owning the asset.

Some of the more significant assumptions inherent in the development of intangible asset fair values, from the perspective of a market participant, include, but are not limited to (i) the amount and timing of projected future cash flows (including revenue and expenses), (ii) the discount rate selected to measure the risks inherent in the future cash flows, (iii) the assessment of the asset's life cycle, and (iv) the competitive trends impacting the asset.

Acquired goodwill

The goodwill of $28.5 million represents future economic benefits expected to arise from synergies from combining operations and commercial organizations to increase market presence and the extension of existing customer relationships. The goodwill recorded is not deductible for income tax purposes.

Global Cooling acquisition

General terms and effects

On March 19, 2021, the Company entered into an Agreement and Plan of Merger (the "GCI Merger Agreement") with BLFS Merger Subsidiary, Inc., a Delaware corporation ("GCI Merger Sub"), Global Cooling, a Delaware corporation and Albert Vierling and William Baumel, in their capacity as the representatives of the stockholders of GCI (collectively, the "GCI Seller Representative"). The acquisition strengthens BioLife's offerings in the cell and gene therapy and broader biopharma markets.

On May 3, 2021, pursuant to the GCI Merger Agreement, subject to the terms and conditions set forth therein, the transactions contemplated by the GCI Merger Agreement were consummated (the "GCI Closing"), GCI Merger Sub merged with and into GCI (the "GCI Merger" and, together with other transactions contemplated by the GCI Merger Agreement, the "GCI Transactions"), with GCI continuing as the surviving corporation in the GCI Merger and a wholly owned subsidiary of the Company. In the GCI Merger, all of the issued and outstanding shares of capital stock of GCI immediately prior to the filing of the Certificate of Merger with the Secretary of State of the State of Delaware (other than those properly exercising any applicable dissenter's rights under Delaware law) were converted into the right to receive the GCI Merger Consideration (as defined below). The Company paid the GCI Merger Consideration to the holders of common stock and preferred stock of GCI (collectively, the "GCI Stockholders").

Merger consideration

The aggregate merger consideration paid pursuant to the GCI Merger Agreement to the GCI Stockholders was 6,646,870 newly issued shares of common stock, provided, however, that the GCI Merger Consideration otherwise payable to GCI Stockholders is subject to the withholding of the GCI Escrow Shares (as defined below) and is subject to reduction for indemnification obligations. The GCI Merger Consideration allocable to one GCI stockholder was reduced by 10,400 shares to satisfy an outstanding note receivable of $374,000. In accordance with ASC 805, the Company recognized the settlement of pre-existing relationships in the forms of cash deposits, trade receivables, and trade payables, which are included in the consideration transferred. The GCI Merger Consideration is not subject to any purchase price adjustments.

Total consideration transferred (in thousands, except number of shares, stock price, and consideration percentage):

BioLife shares outstanding (as of March 19, 2021)		33,401,359
Merger consideration percentage		19.9 %
Merger consideration shares		6,646,870
less: Merger consideration shares withheld to satisfy outstanding GCI stockholder obligations to GCI		10,400
Subtotal		6,636,470
BioLife stock price (as of May 3, 2021)	$	35.07
Value of issued shares	$	232,741
plus: Settlement of BioLife prepaid deposits	$	2,152
plus: Net settlement of BioLife accounts receivable	$	16
Merger Consideration	$	234,909

Transaction costs related to the acquisition are expensed as incurred and are not included in the calculation of consideration transferred.

Escrow shares

At the GCI Closing, approximately nine percent (9%) of the GCI Merger Consideration (the "Escrow Shares", along with any other dividends, distributions or other income on the GCI Escrow Shares, the "GCI Escrow Property") otherwise issuable to the GCI Stockholders (allocated pro rata among the GCI Stockholders based on the GCI Merger Consideration otherwise issuable to them at the GCI Closing), was deposited into a segregated escrow account in accordance with an escrow agreement to be entered into in connection with the GCI Transactions (the "GCI Escrow Agreement").

The GCI Escrow Property will be held for a period of up to twenty-four (24) months after the GCI Closing as the sole and exclusive source of payment for any post-GCI Closing indemnification claims (other than fraud claims), unless earlier released in accordance with the terms of the GCI Escrow Agreement.

Fair value of net assets acquired

Under the acquisition method of accounting, the assets acquired and liabilities assumed from Global Cooling were calculated as of the merger date, at their respective fair values, and consolidated with those of BioLife. The gross contractual accounts receivable acquired in the acquisition was $7.1 million. Of the acquired accounts receivable, $53,000 was estimated to be uncollectible. The fair value calculations required critical estimates, including, but not limited to, future expected cash flows, revenue and expense projections, discount rates, revenue volatility, and royalty rates.

The table below represents the fair value of the net assets acquired and liabilities assumed, which were recorded as of the merger date (amounts in thousands).

Cash	$	43
Accounts receivable, net		7,076
Inventory		15,547
Prepaid expenses and other current assets		639
Property, plant and equipment, net		3,512
Operating lease right-of-use assets, net		1,741
Financing lease right-of-use assets, net		114
Long-term deposits and other assets		4
Developed technology		18,140
Customer relationships		7,020
Tradenames		26,640
Non-compete agreements		1,240
In-process research and development		67,440
Goodwill		137,822
Accounts payable		(9,837)
Line of credit		(4,231)
Lease liabilities, operating		(1,880)
Lease liabilities, financing		(114)
Long-term debt		(4,410)
Deferred tax liability		(24,133)
Other liabilities		(7,464)
Fair value of net assets acquired	**$**	**234,909**

We recorded a measurement period adjustment in the fourth quarter of the year ended December 31, 2021 of $607,000 to the fair value of goodwill and the deferred tax liability. This adjustment related to the tax attributes of the business combination.

The fair value of Global Cooling's identifiable intangible assets and useful lives are as follows (amounts in thousands, except years):

	Fair Value	Useful Life (Years)
Developed technology	$ 18,140	6
Customer relationships	7,020	12
Tradenames	26,640	15
Non-compete agreements	1,240	4
In-process research and development	67,440	N/A
Total identifiable intangible assets	**$ 120,480**	

Fair value measurement methodologies used to calculate the value of any asset can be broadly classified into one of three approaches, referred to as the cost, market and income approaches. In any fair value measurement analysis, all three approaches must be considered, and the approach or approaches deemed most relevant will then be selected for use in the fair value measurement of that asset. The fair values of developed technology and in-process research and development were estimated using a multi-period excess earnings approach. The fair values of customer relationships were estimated using the "distributor method". The fair value of the tradenames is based on the relief from royalty method, which estimates the value of the trade names based on the hypothetical royalty payments that are saved by owning the asset. The fair values of non-compete agreements were estimated using a "with and without" approach, comparing projected cash flows under scenarios assuming the non-compete agreements were and were not in place. The fair value of inventory and property, plant and equipment were determined using the "market approach".

Some of the more significant assumptions inherent in the development of intangible asset fair values, from the perspective of a market participant, include, but are not limited to (i) the amount and timing of projected future cash flows (including revenue and expenses), (ii) the discount rate selected to measure the risks inherent in the future cash flows, (iii) the assessment of the asset's life cycle, and (iv) the competitive trends impacting the asset.

Acquired goodwill

The goodwill of $137.8 million represents future economic benefits expected to arise from synergies from combining operations and commercial organizations to increase market presence and the extension of existing customer relationships. The goodwill recorded is not deductible for income tax purposes.

Revenue, net income, and pro forma presentation

The Company recorded revenue from Sexton of $1.8 million and a net loss of $1.0 million from September 1, 2021, the date of acquisition, to December 31, 2021. The Company recorded revenue from Global Cooling of $39.1 million and a net loss of $19.6 million from May 3, 2021, the date of acquisition, to December 31, 2021. The Company has included the operating results of the acquisitions in its Consolidated Statements of Operations since their respective acquisition date.

The following unaudited pro forma financial information presents the combined results of operations of Sexton as if the acquisition had occurred on January 1, 2021 after giving effect to certain pro forma adjustments. These pro forma adjustments include intangible amortization, stock-based compensation expense and salary expense related to a key employee, and the income tax effect of the adjustments made:

(In thousands)	2021 (unaudited)
Total revenue	$ 122,494
Net loss	$ (9,860)

The following unaudited pro forma financial information presents the combined results of operations of Global Cooling as if the acquisition had occurred on January 1, 2021 after giving effect to certain pro forma adjustments. These pro forma adjustments include intangible amortization, amortization of increased inventory basis, depreciation expense, lease

expense, transaction costs, interest expense, stock-based compensation expense and salary expense related to a key employee, and the income tax effect of the adjustments made:

(In thousands)		2021 (unaudited)
Total revenue	$	143,732
Net income (loss)	$	(16,375)

18. Employee benefit plan

The Company sponsors 401(k) defined contribution plans for its employees. These plans provide for pre-tax and post-tax contributions for all employees. Employee contributions are voluntary. Employees may contribute up to 100% of their annual compensation to these plans, as limited by an annual maximum amount as determined by the Internal Revenue Service. The Company matches employee contributions in amounts to be determined at the Company's sole discretion. The Company made contributions of $1.1 million, $1.0 million, and $0.8 million to the plans for the years ended December 31, 2023, 2022, and 2021.

19. Subsequent events

On January 1, 2024, the Company failed to comply with Section 5.7 (a) and Section 5.7 (c) of the Loan Agreement related to its Term Loan with respect to the depository account requirements and the requirement to deliver a Control Agreement for any Permitted Temporary Account upon the expiration of the Transition Period to transfer all cash holdings to the Lender's bank. On February 26, 2024, the Lender waived the existing defaults under the Loan Agreement and entered into the Waiver and First Amendment to Loan and Security Agreement ("the Amendment").

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

ITEM 9A. CONTROLS AND PROCEDURES

(a) Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our Chief Executive Officer ("CEO") and Chief Financial Officer ("CFO"), evaluated the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act) as of December 31, 2023. The term "disclosure controls and procedures" means controls and other procedures of a company that are designed to provide reasonable assurance that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized, and reported within the time periods specified in the U.S. Securities and Exchange Commission's ("SEC") rules and forms. Management recognizes that a control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. Further, management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures.

Based on the evaluation of our disclosure controls and procedures, our CEO and CFO have concluded that, as of December 31, 2023, our disclosure controls and procedures were not effective due to the material weaknesses in internal control over financial reporting described in section (b) below. A material weakness is a deficiency, or combination of deficiencies, in internal control over financial reporting, that adversely affects the Company's ability to initiate, authorize, record, process, or report external financial data reliably in accordance with U.S. GAAP such that there is more than a remote likelihood that a material misstatement of the Company's annual or interim financial statements will not be prevented or detected.

(b) Management's Annual Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting (as defined in Rule 13a-15(f) of the Exchange Act) and the preparation of financial statements for external purposes in accordance with United States Generally Accepted Accounting Policies ("U.S. GAAP"). Using the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO") in Internal Control—Integrated Framework (2013 framework), management of the Company under supervision and participation of the CEO and CFO, conducted an evaluation of the effectiveness of our internal control over financial reporting as of December 31, 2023.

Based on our assessment under the framework in Internal Control—Integrated Framework (2013 framework), our management concluded that our internal control over financial reporting was not effective as of December 31, 2023 due to the existence of material weaknesses described below.

The material weaknesses identified by management primarily relate to an ineffective control environment that also impacted the design and operating effectiveness of elements of the risk assessment, monitoring and other components. These weaknesses were attributed to a lack of a sufficient complement of resources with the appropriate level of internal controls training, knowledge, and expertise necessary to meet our financial reporting requirements and to provide adequate oversight over the performance of controls.

Additionally, management did not adequately design and implement effective control activities, including general controls over information technology, and effective policies and procedures, resulting in additional material weaknesses within certain business processes. As a result, the following additional material weaknesses were identified:

- Management did not design and maintain effective internal controls over certain financial statement areas, including the procure to pay process and revenue recognition.
- Management did not design and maintain effective information technology general controls for the significant systems used in the preparation of the financial statements. Specifically, we did not design and maintain:
    - controls over change management for certain financial systems to ensure that data or system changes were identified, tested, and authorized according to policy, and migrated correctly into the production environment; and
    - monitoring controls which are executed by users other than those conducting changes to our financial systems.

Following the identification of the material weaknesses and prior to filing this Annual Report on Form 10-K, we performed additional analyses and other procedures to ensure that our consolidated financial statements included in this Annual Report were prepared in accordance with U.S. GAAP. Our CEO and CFO have concluded that our consolidated financial statements present fairly, in all material respects, our financial position, results of operations and cash flows for the periods presented in this Annual Report.

These material weaknesses create a reasonable possibility that a material misstatement to the consolidated financial statements would not be prevented or detected on a timely basis. Therefore, we concluded that the deficiencies above represent material weaknesses in our internal control over financial reporting, and our internal control over financial reporting was not effective as of December 31, 2023.

Management has been actively engaged in developing and implementing remediation plans to address these material weaknesses as described below in section (c).

The Company's independent registered public accounting firm, Grant Thornton, LLP, who audited our internal controls over financial reporting, has issued an adverse opinion on the effectiveness of the Company's internal control over financial reporting as of December 31, 2023, as stated in its report.

(c) Remediation

During fiscal year 2023, management made the following changes to internal control over financial reporting to remediate previously identified material weaknesses, as follows:

- Ensured system administrator access is restricted to appropriate individuals.
- Made a significant investment in hiring additional resources to enhance our technical accounting and internal control over financial reporting capabilities.
- Redesigned controls in all financial reporting processes and implemented 48 additional internal control procedures in our financial reporting processes.
- Trained finance and accounting personnel and key management roles across the organization in the design and execution of internal controls under the required standards.
- Transitioned the accounting system for one additional subsidiary to NetSuite in mid-2023, aiding in the standardization of controls; all entities were transitioned to NetSuite as of July 1, 2023 except the two subsidiary entities the Company plans to dispose.
- Hired a new ERP implementation consulting team in Q4 2023 with expertise in internal control system design.
- Hired a new internal audit consulting team in Q4 2023 with expertise in internal control design, including IT general controls.

Although the Company implemented meaningful control enhancements throughout the year and hired additional resources, including a new internal audit consulting firm, there was insufficient time to demonstrate full remediation of its controls related to effective control environment and process level controls in certain financial statement areas.

While we have implemented changes to our control environment and identified fewer material weaknesses in fiscal year 2023 compared to fiscal year 2022, we require additional time to complete the implementation of our remediation plans and demonstrate the effectiveness of our remediation efforts in fiscal year 2024. The material weaknesses cannot be considered remediated until the underlying remedial controls operate for a sufficient period of time and Management has concluded, through testing, that these controls are operating effectively.

Management, with the oversight of the Audit Committee of the Board of Directors, will continue to take steps necessary to remedy the material weaknesses to reinforce the overall design and capability of our control environment. The following has been planned for implementation in Management's ongoing efforts to remediate the identified material weaknesses:

- The Company has included remediation of material weaknesses into its bonus compensation goals for 2024 to promote accountability of management personnel.
- The Company will enhance and standardize policies and procedures across all entities to ensure consistency in the performance of the controls; and
- The Company will continue to make strategic investments in personnel, external consultants, and available tools or systems to streamline execution and documentation of controls through organization and automation.

(d) Changes in Internal Control Over Financial Reporting

For the fiscal quarter ended December 31, 2023, Management established internal controls related to a formal cybersecurity program and a cybersecurity incident reporting policy, in compliance with the SEC cyber disclosure rule effective December 18, 2023. Additionally, the Company remediated the prior year material weaknesses related to indirect tax and IT logical access.

Management assessed control design in all financial reporting processes, identifying 48 additional key controls over financial reporting. Based on the results of testing, Management identified fewer material weaknesses in fiscal year 2023 compared to fiscal year 2022.

Other than the changes noted above, there have been no other changes in our internal control over financial reporting during the fiscal quarter ended December 31, 2023 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

(e) Attestation Report of the Independent Registered Public Accounting Firm

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Board of Directors and Shareholders
BioLife Solutions, Inc.

Opinion on internal control over financial reporting

We have audited the internal control over financial reporting of BioLife Solutions, Inc. and subsidiaries (the "Company") as of December 31, 2023, based on criteria established in the 2013 *Internal Control—Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO"). In our opinion, because of the effect of the material weakness described in the following paragraphs on the achievement of the objectives of the control criteria, the Company has not maintained effective internal control over financial reporting as of December 31, 2023, based on criteria established in the 2013 *Internal Control—Integrated Framework* issued by COSO.

A material weakness is a deficiency, or combination of control deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of the company's annual or interim financial statements will not be prevented or detected on a timely basis. The following material weakness has been identified and included in management's assessment.

(i) Inappropriately designed entity-level controls impacting the control environment, risk assessment, and monitoring activities to prevent or detect material misstatements to the consolidated financial statements attributed to an insufficient number of qualified resources and inadequate oversight and accountability over the performance of controls, ineffective identification and assessment or risks impacting internal control over financial reporting, and ineffective monitoring controls; (ii) inappropriate information system change management within certain key financial systems; (iii) ineffective accounting procedures and related controls over certain financial statement areas; (iv) inadequate risk assessment, accounting policies, procedures and related controls performed over the procure to pay and revenue recognition processes.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) ("PCAOB"), the consolidated financial statements of the Company as of and for the year ended December 31, 2023. The material weakness identified above was considered in determining the nature, timing, and extent of audit tests applied in our audit of the 2023 consolidated financial statements, and this report does not affect our report dated February 29, 2024 which expressed an unqualified opinion on those financial statements.

Basis for opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Annual Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and limitations of internal control over financial reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Other information

We do not express an opinion or any other form of assurance on the remediation plans and actions described in Management's Report.

/s/ GRANT THORNTON LLP

Bellevue, Washington
February 29, 2024

ITEM 9B. OTHER INFORMATION

Rule 10b5-1 Trading Arrangements

The following table identifies and provides the material terms of the Rule 10b5-1 trading arrangements (as such term is defined in Item 408 of Regulation S-K) adopted or terminated by our officers (as defined in Rule 16a-1(f) under the Exchange Act) and directors during the quarter ended December 31, 2023.

Name and Position	Plan Adoption / Termination	Plan Adoption / Termination Date	Expiration Date	Number of Shares Purchased (Sold) / Terminated under Plan
Sarah Aebersold, Chief Human Resources Officer	Adoption	December 15, 2023	September 30, 2024	(10,000)
Todd Berard, Chief Marketing Officer[1]	Termination	December 15, 2023	December 31, 2023	30,000
Todd Berard, Chief Marketing Officer	Adoption	December 15, 2023	December 31, 2024	(30,000)
Michael Rice, Former Chief Executive Officer[2]	Termination	November 14, 2023	November 16, 2023	33,334
Marcus Schulz, Former Chief Revenue Officer	Termination	October 19, 2023	April 30, 2024	10,000

(1) On December 15, 2023, Todd Berard, our Chief Marketing Officer, terminated the remaining portion of his Rule 10b5-1 trading arrangement originally adopted on September 14, 2022 for the sale of up to 50,000 shares of the Company's common stock until December 31, 2023. The Rule 10b5-1 trading arrangement was in place solely for the potential exercise of vested stock options and for sales intended to satisfy tax obligations payable due to the vesting and settlement of certain restricted stock awards. Since the adoption of the Rule 10b5-1 trading arrangement, 20,000 shares of the Company's common stock were sold out of the original 50,000 shares.

(2) On November 14, 2023, Michael Rice, our former Chief Executive Officer, terminated the remaining portion of his Rule 10b5-1 trading arrangement originally adopted on September 14, 2022 for the sale of up to 100,000 shares of the Company's common stock until November 16, 2023. The trading arrangement was in place solely for the potential exercise of vested stock options and for sales intended to satisfy tax obligations payable due to the vesting and settlement of certain restricted stock awards. Since the adoption of the Rule 10b5-1 trading arrangement, 66,666 shares of the Company's common stock were sold out of the original 100,000 shares.

Non-Rule 10b5-1 Trading Arrangements

During the quarter ended December 31, 2023, none of our officers or directors adopted or terminated any non-Rule 10b5-1 trading arrangement (as such term is defined in Item 408 of Regulation S-K).

Waiver and first amendment of Term Loan

On January 1, 2024, the Company failed to comply with Section 5.7 (a) and Section 5.7 (c) of the Loan Agreement related to its Term Loan with respect to the depository account requirements and the requirement to deliver a Control Agreement for any Permitted Temporary Account upon the expiration of the Transition Period to transfer all cash holdings to the Lender's bank. On February 26, 2024, the Lender waived the existing defaults under the Loan Agreement and entered into the Waiver and First Amendment to Loan and Security Agreement ("the Amendment").

ITEM 9C. DISCLOSURE REGARDING FOREIGN JURISDICTIONS THAT PREVENT INSPECTIONS

None.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

The following table and text set forth the names and ages of our directors and executive officers as of December 31, 2023. The Board is comprised of only one class of directors. Also provided herein are brief descriptions of the business experience of each director and executive officer during the past five years (based on information supplied by them) and an indication of directorships held by each director in other public companies subject to the reporting requirements under the Federal securities laws. During the past ten years, none of our current directors or executive officers has been involved in any legal proceedings that are material to an evaluation of the ability or integrity of such person. There are no family relationships among any of the directors or executive officers named. No director or executive officer has any arrangement

or understanding between him or her and any other person(s) pursuant to which he or she is to be selected as a director or officer of the Company.

Name	Age	Position and Offices With the Company
Roderick de Greef[(1)]	62	Chief Executive Officer and Chairman of the Board
Troy Wichterman	39	Chief Financial Officer
Aby J. Mathew, Ph.D.	51	Chief Scientific Officer and Executive Vice President
Todd Berard	55	Chief Marketing Officer
Karen Foster	64	Chief Quality and Operations Officer
Geraint Phillips	57	Senior Vice President, Global Operations
Garrie Richardson	51	Chief Revenue Officer
Sarah Aebersold	48	Chief Human Resources Officer
Joseph Schick	62	Director
Rachel Ellingson	54	Director
Amy DuRoss	49	Lead Director
Joydeep Goswami	52	Director
Tim Moore	62	Director

(1) Roderick de Greef, previously serving as a director of the Company since January 4, 2023, was appointed as Chief Executive Officer and Chairman of the Board as of the same day.

Roderick de Greef has been Chief Executive Officer and Chairman of the Board since October 2023 at BioLife. Previously, Mr. de Greef began serving as a director of the Board in January 2023, prior to which he served as President and Chief Operating Officer from November 2021 until he retired on January 3, 2023. Mr. de Greef was appointed Chief Operating Officer from December 2019 to May 2021 after his appointment as Chief Financial Officer from May 2016 to November 2021. He also served as interim Chief Financial Officer and interim Secretary from March 2016 through May 2016. Mr. de Greef served as a director of the Company from June 2000 through November 2013, and provided the Company with strategic and financial consulting services from July 2007 through August 2011. Since November 2022, Mr. de Greef has served as a director of the Upper Connecticut Valley Hospital, a non-profit, rural hospital in northern New Hampshire. Since December 2020, Mr. de Greef has served as a director of Sirona Medical Technologies, a cardia electrophysiology company. From February 2019 to January 2021, Mr. de Greef served as a director, chairman of the Audit Committee of the board of directors of Indonesia Energy Corporation Limited, an oil and gas exploration and production company. Mr. de Greef served Pareteum Corporation., a mobile communications company, as a director, chair of the Audit Committee and member of the Nominating and Corporate Governance Committee and Compensation Committee from September 2015 to September 2017, and also from January 2008 to October 2011. From November 2013 to October 2014, Mr. de Greef served as the president and sole director of Cambridge Cardiac Technologies, Inc. a privately held successor to Cambridge Heart, Inc. From November 2008 to October 2013, Mr. de Greef was the chairman of the board of Cambridge Heart, Inc., a manufacturer of non-invasive diagnostic cardiology products. From November 2003 to May 2013, Mr. de Greef served as a director, member of the Audit Committee and chairman of the Compensation Committee of Endologix, Inc. From 2001 to 2006, Mr. de Greef served as Executive Vice President and Chief Financial Officer of NASDAQ listed Cardiac Science, Inc., which in 2004 was ranked as the 4th fastest growing technology company in North America on Deloitte & Touche's Fast 500 listing. Mr. de Greef received his Master of Business Administration degree from the University of Oregon, and a Bachelor of Arts in Economics and International Relations from San Francisco State University. Mr. de Greef has extensive experience in corporate finance and the business world in general as well as serving as an officer and director of public companies.

Troy Wichterman has been Chief Financial Officer since November 2021. Before his appointment as Chief Financial Officer, Mr. Wichterman served as the Company's Vice President, Finance since November 2019. In that role, Mr. Wichterman oversaw the finance and accounting organization in the areas of integrating acquired businesses, acquisition due diligence and deal structure, SEC reporting, financial planning and analysis, operational finance, and audit compliance. Mr. Wichterman also served as Director of Financial Planning and Analysis from June 2016 to November 2019 and Financial Analyst from February 2015 to June 2016. Prior to joining the company, he was most recently a Senior Financial Analyst, Acquisitions at Ventas, a public healthcare REIT, from January 2013 to September 2014. Prior to Ventas, he was most recently a Senior Portfolio Analyst at Heitman, a private equity REIT, from June 2009 – January 2013 and began his career as an Auditing Associate at PwC in Chicago from 2008 to 2009. Mr. Wichterman is a CPA (inactive) and holds a

Bachelor of Business Administration degree and a Master of Accountancy degree from the University of Wisconsin – Madison.

Aby J. Mathew, Ph.D. has been Executive Vice President and Chief Scientific Officer since December 2019. Before his appointment as Executive Vice President and Chief Scientific Officer, Dr. Mathew had served as Chief Technology Officer. Dr. Mathew was part of the founding team of BioLife Solutions, Inc., and has been employed by BioLife since 2000. Dr. Mathew is a co-developer of BioLife's biopreservation media solutions and co-inventor on issued and pending patents related to methods, devices, and formulations for the preservation of cells, tissues, and organs. He holds a Ph.D. in Biological Sciences from Binghamton University and a B.S. in Microbiology from Cornell University. Dr. Mathew has been researching low temperature biopreservation since 1994, and his studies contributed to the development of BioLife's current commercial HypoThermosol and CryoStor product platforms and intellectual property foundation. Dr. Mathew is currently active in, or previously a member of, AABB (formerly the American Association of Blood Banks), BEST (the Biomedical Excellence for Safer Transfusion collaborative), the International Society for Cell and Gene Therapy (ISCT), the Alliance for Regenerative Medicine (ARM), Tissue Engineering & Regenerative Medicine International Society (TERMIS), Society for Cryobiology, International Society for Biological and Environmental Repositories (ISBER), American Society for Cell Biology, and the Society for In Vitro Biology. Dr. Mathew is a member of, the Board of Directors, and Advisory Panel, of the Parent's Guide to Cord Blood Foundation, the Scientific Advisory Board of HemaCare Corporation, the founding Board of Directors of the Cord Blood Association, the Board of Directors of PanTHERA CryoSolutions, Inc., the NIST-AMTech National Cell Manufacturing Consortium, the California Institute for Regenerative Medicine (CIRM) Clinical Advisory Panel, the Business Advisory Board of RoosterBio Inc., and the Scientific Advisory Board of SAVSU Technologies. Dr. Mathew has obtained UCLA Corporate Governance Program Certification.

Todd Berard has been Chief Marketing Officer since December 2019. Before his appointment as Chief Marketing Officer, Mr. Berard had served as Vice President of Marketing since February 2015 and Senior Director of Marketing since July 2014. Previous to BioLife, Mr. Berard served as Director of Marketing at Verathon Medical; a division of Roper Inc., from September 2010 until July 2014, overseeing the global marketing, product development, and product launch strategies for a portfolio of six medical device brands. He also managed all strategic partnerships for product development and helped guide the organization through several key product launches and the corporate acquisition. At Verathon, Mr. Berard oversaw a creative and product management team of 12. Responsibilities included all global marketing initiatives and campaigns, strategy, product portfolio management, and strategic planning. He has over twenty years of experience in life sciences, health care, medical devices, and technology; working for both global leaders and small technology startups, including the University of Washington School of Medicine, DuPont, and Medtronic. He has a Bachelor of Science Degree in Biochemistry from the University of Vermont and an MBA from the University of Washington Foster School of Business.

Karen Foster has been Chief Quality Officer since December 2019, and became Chief Quality and Operations Officer as of January 2024. Before her appointment as Chief Quality Officer, Ms. Foster had served as Vice President, Operations since April 2016. From 2003 to early 2016, Ms. Foster was Vice President of Laboratory Operations and Site Leader at ViaCord, LLC, a family cord blood bank, and subsidiary of PerkinElmer Inc. Over a 25-year career, Ms. Foster has managed manufacturing and quality operations in several capacities for companies including ViaCord, Pfizer, Inc. (formerly Pharmacia Corporation) and Amersham Pharmacia Biotech, Inc. (formerly Phamacia Biotech, Inc.). She holds an MBA from the University of Wisconsin-Milwaukee (specialization in Operations Management), an M.S. in Zoology from University of Wisconsin-Milwaukee (specialization in Microbiology) and a B.S. in Biological Sciences from Michigan Technological University.

Geraint Phillips has been Senior Vice President, Global Operations since January 2023. Before his appointment as Chief Operating Officer, Mr. Phillips served as Vice President of Freezer Operations upon the acquisition of Global Cooling, Inc. in May 2021, where he served as its Chief Operating Officer since December 2020. While VP of Freezer Operations, Mr. Phillips oversaw the Company's liquid nitrogen storage freezer product lines. His career spans more than 20 years of operational executive leadership positions that include Senior Director of Global Operations at Azenta Life Sciences (NASDAQ: AZTA; formerly Brooks Life Sciences) and 14 years of progressive operational responsibility to the VP of Global Operations, Environmental Health Division at PerkinElmer (NYSE: PKI), where he held global responsibilities for a number of divisions. Phillips has a Bachelor of Science in Physics from Cardiff University and an MBA from the University of South Wales.

Garrie Richardson has been Chief Revenue Officer since October 2023. Before his appointment to Chief Revenue Officer, Mr. Richardson served as General Manager of SciSafe, Inc., a wholly owned subsidiary of BioLife Solutions, Inc. from 2020 to 2023. Prior to BioLife's acquisition of SciSafe, Inc. in October 2020, Mr. Richardson was the President and

Founder of SciSafe, Inc. from 2010 to 2020, overseeing operations, sales and marketing and strategic planning. He has a Bachelor of Science Degree in Marketing and Master of Business Administration from the Sorrell College of Business at Troy University.

Sarah Aebersold has been Chief Human Resources Officer since January 2023. Previously, Ms. Aebersold was Vice President, Global Human Resources since January 2021 and served as the Senior Director, Global Human Resources & Administration since February 2020. In that role, Ms. Aebersold oversaw human resources programs in the areas of employee relations, talent acquisition, benefits, compensation, coaching, training and development, policy, and data management. Prior to joining the Company, Ms. Aebersold served in a variety of human resources roles with companies including MCG Health, a healthcare solutions provider (2016-2020, most recently as Head of Human Resources and Administration), Spacelabs Healthcare, a manufacturer of medical equipment (2014-2016, 2012-2013, most recently as Senior Manager, Human Resources), T-Mobile, a mobile communication company, (2013-2013, most recently as Human Resource Manager), Seattle Children's Hospital, a children's hospital (2009-2012, most recently as Manager, Human Resources Consulting), and ZymoGenetics, Inc., a biotechnology/pharmaceutical company (2004-2009, most recently as Human Resources Manager).

Joseph Schick joined the Board in November 2013 as a director and Chair of the Audit Committee. He has 17 years of experience as a Chief Financial Officer spanning four different mid-sized companies in various industries. Prior to his experience as a Chief Financial Officer, Mr. Schick worked in various roles for seven years at Expedia (NASDAQ: EXPE), including Senior Vice President of Finance. From this background, Mr. Schick has significant experience with SEC reporting, internal controls, strategic planning, and mergers and acquisitions. Mr. Schick started his career with Arthur Andersen and is a CPA who received his B.S. in Accounting from the University of Illinois. He is also on various non-profit boards and completed the Director Certification program at UCLA. The Board has determined that Mr. Schick is qualified to serve as a director because of his financial experience with public companies.

Rachel Ellingson has served as a director and member of the Company's Compensation Committee and Audit Committee since April 2021. Since April 2018, Ms. Ellingson has served as Senior Vice President and Chief Strategy Officer at Zimmer Biomet Holdings, Inc., a medical device company (NYSE: ZBH). As a member of the executive leadership team at ZBH, Ms. Ellingson is responsible for global oversight of strategy, business development and integration. Prior to joining ZBH, Ms. Ellingson served as Vice President, Corporate Strategy and as a member of the executive leadership team at St. Jude Medical, Inc., a medical device company, from 2011 to 2017. Before joining St. Jude Medical, Ms. Ellingson served as Vice President, Business Development and Investor Relations at AGA Medical Corporation, a developer and manufacturer of cardiovascular medical devices. Prior to joining AGA Medical, Ms. Ellingson was an investment banker, most recently as a Managing Director, Healthcare Investment Banking with Bank of America Corporation (NYSE: BAC) and prior to that, was with Cowen & Company (NASDAQ: COWN). Ms. Ellingson holds an MBA in Finance from the University of Connecticut and a Bachelor of Arts degree from the University of Rhode Island. The Board has determined that Ms. Ellingson is qualified to serve as a director because of her experience with strategic leadership and investment banking.

Amy DuRoss has served as Lead Director of the Company's Board of Directors since August 2023 and member of the Company's Governance and Nominating Committee and as Chair of the Compensation Committee since April 2021. Ms. DuRoss previously served as Chief Executive Officer of Vineti, Inc., a healthcare technology company, from the time that she co-founded Vineti in April 2016 through March 2022. Ms. DuRoss led Vineti and its software as a service platform to the forefront of innovation supporting cell and gene therapy manufacturing, delivery and patient follow up. Before co-founding Vineti, Ms. DuRoss focused on healthcare new business creation for GE Ventures, a venture capital subsidiary of General Electric (NYSE: GE), serving as a Managing Director from May 2013 to May 2017. Prior to GE, Ms. DuRoss was Chief Business Officer at Navigenics, Inc., a genomics company sold to Life Technologies Corporation in 2012. Ms. DuRoss was Co-founder and Executive Director of Proposition 71, California's stem cell research initiative passed in 2004, as well as Chief of Staff at the resulting state grant oversight agency. Ms. DuRoss was named a 2016 Health Innovator Fellow by the Aspen Institute. Ms. DuRoss also serves as a member of the Board of Directors for the ARM Foundation for Cell and Gene Medicine. Ms. DuRoss holds an MBA, Masters degree in English, and Bachelors of Arts degree in English from Stanford University. The Board has determined that Ms. DuRoss is qualified to serve as a director because of her experience founding and growing a successful business in the cell and gene therapy space.

Joydeep Goswami has served as a director and member of the Company's Audit Committee and as chair of the Nominating and Governance Committee since October 2021. Mr. Goswami currently serves as Chief Financial Officer at Illumina, a biotechnology company, since February 2023. Previously, Mr. Goswami was the Interim Chief Financial Officer at Illumina since July of 2022 and Chief Strategy and Corporate Development Officer since September 2019. As a member of the executive leadership at Illumina, Mr. Goswami is responsible for driving planning, strategic partnerships, and

acquisitions. Prior to Illumina, Mr. Goswami served as the President of Thermo Fisher Scientific's Clinical Next-Generation Sequencing (NGS) and Oncology business unit, where he oversaw efforts that drove the adoption of NGS in clinical oncology, research and reproductive health. Mr.Goswami has held senior leadership roles across the pharma/biotech, diagnostics and research tool continuum, previously serving at companies such as Life Technologies and Invitrogen, in addition to Thermo Fisher Scientific. He has led teams across various functions, including sales, marketing, R&D and other support functions. Mr. Goswami served as President, Asia Pacific and Japan while at Thermo Fisher Scientific and created the Stem Cells and Regenerative Medicine Business Unit at Invitrogen. Additionally, he spent five years at McKinsey, where he specialized in strategy for pharmaceutical, medical technology and technology companies. Mr. Goswami holds his MS, PhD in Chemical Engineering, and MBA from MIT and a Bachelor's degree in Chemical Engineering from the Indian Institute of Technology. The Board has determined that Mr. Goswami is qualified to serve as a director because of his experience with strategic leadership and international business operations.

Tim Moore has served as a director and member of the Company's Compensation and Nominating and Governance Committees since September 2022. He has more than three decades of leadership experience in biopharmaceutical manufacturing and operations. Mr. Moore served as COO of Instil Bio through December 2022, a TIL cell therapy company focused on solid tumors. Mr. Moore also served as the President and COO at PACT Pharma from October 2019 through September 2022. Prior to joining PACT, he served as Executive Vice President, Technical Operations at Kite, a Gilead Company, since March of 2016. During this time Mr. Moore was responsible for overseeing the process development, manufacturing, quality and supply chain for the launch of Yescarta®, one of the first CAR T therapies to be developed, manufactured and commercialized, as well as advancement of the Kite pipeline. In addition, Mr. Moore globally expanded the biopharmaceutical operations to serve and support the US, EU, as well as key partners in Asia. Prior to Kite, Mr. Moore served as the Senior Vice President, Head of Global Technical Operations – Biologics of Genentech, Inc. and as a member of the Genentech Executive Committee since 2010. In this role, Mr. Moore oversaw global leadership for more than 7,500 professionals across 10 internal sites and over 37 contract manufacturing organizations, as well as global manufacturing and end-to-end quality supply performance of more than 20 biological product families. Prior to that, Mr. Moore was Genentech's Senior Vice President, Global Supply Chain and Global Engineering from 2007 to 2010. Previously, Mr. Moore served as Vice President, Operations at ZLB Behring (formerly Aventis Behring). He is currently a member of ISPE, PDA and has been a part of the Executive Committee of BioPhorum and serves as a Board member for Cerus. Mr. Moore received a B.S. in Chemical Engineering from Tulsa University and a M.S. in Engineering Management from Northwestern University. The Board has determined that Mr. Moore is qualified to serve as a director because of his extensive experience with leading and executing large scale manufacturing operations in the biopharmaceutical industry.

Except as otherwise provided by law, each director shall hold office until either their successor is elected and qualified, or until he or she sooner dies, resigns, is removed or becomes disqualified. Officers serve at the discretion of the Board.

Board of Directors

Overview

Our Bylaws provide that the size of our Board is to be determined from time to time by resolution of the Board but shall consist of at least three members. As of the date of this filing, our Board consists of six members. Our Board has determined five of our directors – Messrs. Schick, Goswami, and Moore, and Mss. DuRoss and Ellingson – to be independent under the rules of the NASDAQ Stock Market, after taking into consideration, among other things, those transactions described under "Certain Transactions." Mr. de Greef serves as Chairman of the Board and is Chief Executive Officer and, as of August 1, 2023, Amy DuRoss was appointed as Lead Director of the Board.

At each annual meeting of stockholders, members of our Board are elected to serve until the next annual meeting and until their successors are duly elected and qualified. If the nominees named in this report are elected, the Board will consist of six persons.

Committees of the Board of Directors

The Board has established an Audit Committee, a Compensation Committee, and a Governance and Nominating Committee. Each committee operates pursuant to a written charter that may be viewed on our website at *http://investors.biolifesolutions.com/corporate-governance*. The inclusion of our web site address in this document does not include or incorporate by reference the information on our web site into this annual filing.

The following table sets forth the current composition of the three standing committees of our Board:

Name	Board	Audit	Compensation	Governance and Nominating
Mr. de Greef	Chair			
Mr. Schick (financial expert)	X	Chair	X	X
Ms. DuRoss	X		Chair	X
Ms. Ellingson	X	X	X	
Mr. Goswami	X	X		Chair
Mr. Moore	X		X	X

Audit Committee. Our Audit Committee's role includes the oversight of our financial, accounting and reporting processes; our system of internal accounting and financial controls; and our compliance with related legal, regulatory, and ethical requirements. The Audit Committee oversees the appointment, compensation, engagement, retention, termination and services of our independent registered public accounting firm, including conducting a review of its independence; reviewing and approving the planned scope of our annual audit; overseeing our independent registered public accounting firm's audit work; reviewing and pre-approving any audit and non-audit services that may be performed by our independent registered public accounting firm; reviewing with management and our independent registered public accounting firm the adequacy of our internal financial and disclosure controls; reviewing our critical accounting policies and the application of accounting principles; and monitoring the rotation of partners of our independent registered public accounting firm on our audit engagement team as required by regulation.

In addition, the Audit Committee's role includes meeting to review our annual audited financial statements and quarterly financial statements with management and our independent registered public accounting firm. The Audit Committee has the authority to obtain independent advice and assistance from internal or external legal, accounting and other advisors, at the Company's expense.

The Board has determined that all members of our Audit Committee meet the independence and financial literacy standards of NASDAQ and applicable SEC rules. The Board of Directors has determined that Mr. Schick is an "audit committee financial expert" as defined by the rules of the SEC.

Please see the section entitled "Report of the Audit Committee of the Board of Directors" for further matters related to the Audit Committee.

Compensation Committee. The purpose of the Compensation Committee is to discharge its fiduciary responsibilities relating to the compensation of executive officers, the organizational structure, succession, retention and training policies and review and oversight of benefit programs. Our Compensation Committee is responsible for reviewing the recommendations of our Chief Executive Officer and Chief Financial Officer, making recommendations to the Board regarding the compensation of our executive officers, and ensuring that the total compensation paid to the executive officers is reasonable and competitive, and does not promote excessive risk taking. In making its recommendation to the Board, the Compensation Committee considers the results of the most recent stockholder advisory vote on executive compensation. The Chief Executive Officer may not be present during voting or deliberation on his compensation. The Compensation Committee is also responsible for reviewing and making recommendations to the Board regarding director and committee member compensation. In addition, the Compensation Committee approves and has oversight over our bonus plans for executive officers and/or stock-based compensation plans and oversight of our overall compensation plans and benefit programs, including approval and oversight of grants.

In discharge of its duties related to administration of executive bonus plans, the Compensation Committee may, subject to the terms of each plan, delegate authority to management for the day-to-day non-material administration of such plans. Further, the Compensation Committee may, subject to the terms of each plan, delegate authority to management to make grants to non-executive officers under stock-based compensation plans.

The Compensation Committee has the authority to obtain independent advice and assistance from internal or external legal, accounting and other advisors, at the Company's expense. The Compensation Committee may select, or receive advice from, a compensation consultant, legal counsel or other adviser to the Committee, other than in-house legal counsel, only

after taking into consideration the six factors outlined in Rule 10C-1 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"). In considering and determining compensation levels, the Compensation Committee reviews independent and externally generated compensation data, in accordance with Rule 10C-1 of the Exchange Act.

The members of the Compensation Committee are independent directors within the meaning of the listing standards of the NASDAQ Stock Market.

Governance and Nominating Committee. Our Governance and Nominating Committee's primary purpose is to evaluate candidates for membership on our Board and make recommendations to our Board regarding candidates; make recommendations with respect to the composition of our Board and its committees; provide guidance to our human resources, legal, and finance departments relating to director orientation programs; recommend corporate governance principles applicable to the Company; manage periodic review, discussion and evaluation of the performance of our Board, its committees and its members and oversee and monitor compliance with our Code of Business Conduct and Ethics. The Governance and Nominating Committee has the authority to obtain independent advice and assistance from internal or external legal, accounting, and other advisors, at the Company's expense.

All members of our Governance and Nominating Committee are independent under the listing standards of the NASDAQ Stock Market.

The Governance and Nominating Committee will consider candidates recommended by stockholders in accordance with the procedures set forth in our Bylaws, and prior to the date it recommends a slate of director nominees to the Board. Pursuant to the Governance and Nominating Committee Charter, there is no difference in the manner in which a nominee recommended by a stockholder or otherwise is evaluated.

In carrying out its function to nominate candidates for election to our Board, the Governance and Nominating Committee considers the Board's mix of skills, experience, character, commitment and diversity, with diversity being broadly construed to mean a variety of opinions, perspectives and backgrounds, such as gender, race and ethnicity differences, as well as other differentiating characteristics, all in the context of the requirements and needs of our Board at that point in time. In reviewing potential candidates, the Committee will also consider all relationships between any proposed nominee and any of our stockholders, competitors, customers, suppliers or other persons with a relationship to the Company. The Governance and Nominating Committee believes that each candidate should be an individual who has demonstrated exceptional ability and judgment, who are willing and able to make a sufficient time commitment to the Company, and who shall be most effective, in conjunction with the other nominees to the Board, in collectively serving the long-term interests of the stockholders.

The Governance and Nominating Committee's methods for identifying candidates for election to our Board include the solicitation of ideas for possible candidates from a number of sources, including from members of our Board, our executive officers, individuals who our executive officers or Board members believe would be aware of candidates who would add value to our Board and through other research. The Governance and Nominating Committee may, from time to time, retain, for a fee, one or more third-party search firms to identify suitable candidates. The Governance and Nominating Committee will consider all candidates identified through the processes described above, and will evaluate each candidate, including incumbents, based on the same criteria.

The Governance and Nominating Committee does not have a formal policy with respect to diversity; however, the Board and the Governance and Nominating Committee believe that it is essential that the Board members represent diverse viewpoints.

Number of Meetings

The Board held a total of 23 meetings during 2023. Our Audit Committee held seven meetings in 2023, our Compensation Committee held two meetings in 2023 and our Governance and Nominating Committee held 2 meetings during 2023. Each incumbent director attended greater than 60% of the total number of Board meetings in which they were responsible for attending.

Board Member Attendance at Annual Stockholder Meetings

Although we do not have a formal policy regarding director attendance at annual stockholder meetings, directors are encouraged to attend these annual meetings.

Codes of Business Conduct and Ethics

We believe in sound corporate governance practices and have always encouraged our employees, including officers and directors to conduct business in an honest and ethical manner. Additionally, it has always been our policy to comply with all applicable laws and provide accurate and timely disclosure.

Accordingly, the Board has adopted a Code of Business Conduct and Ethics for all employees. The Board has adopted an additional corporate code of ethics for its Chief Executive Officer, Chief Financial Officer, and other senior financial officers, which is intended to be a "code of ethics" as defined by applicable SEC rules. The Code of Business Conduct and Ethics is publicly available on our website at http://investors.biolifesolutions.com/corporate-governance. The Code of Business Conduct and Ethics is designed to deter wrongdoing and promote honest and ethical conduct and compliance with applicable laws and regulations. These codes also incorporate what we expect from our executives so as to enable us to provide accurate and timely disclosure in our filings with the SEC and other public communications. Any amendments made to the Code of Business Conduct and Ethics will be available on our website.

Delinquent Section 16(a) Reports

Section 16(a) of the Exchange Act requires the Company's directors and executive officers, and persons who own more than 10% of a registered class of the Company's equity securities, to file with the SEC reports of beneficial ownership and reports of changes in beneficial ownership in the Company's securities. Based solely upon a review of Forms 3, 4 and 5, and amendments thereto, filed electronically with the SEC during the year ended December 31, 2023, the Company believes that all Section 16(a) filings applicable to its directors, officers, and 10% stockholders were filed on a timely basis during the year ended December 31, 2023, except those listed below:

- January 10, 2023: Section 16(a) filings filed late by Michael Rice, Aby Mathew, Karen Foster, Geraint Phillips, Troy Wichterman, Sarah Aebersold, Todd Berard, and Marcus Schulz. Each filed one late Form 4 reporting one transaction.
- November 1, 2023: Section 16(a) filing filed late by Garrie Richardson reflecting one late Form 4 reporting one transaction.
- December 1, 2023: Section 16(a) filings filed late by Aby Mathew, Karen Foster, Geraint Phillips, and Troy Wichterman. Each filed one late Form 4 reporting one transaction.

Stockholder Communications with Directors

Stockholders wishing to communicate with the Board or with a particular member or committee of the Board should address communications to the Board, or to an individual member or committee as follows: c/o BioLife Solutions, Inc., Attention: Corporate Secretary, 3303 Monte Villa Parkway, Suite 310, Bothell, Washington 98021. All communications will be relayed to that addressee. From time to time, the Board may change the process through which stockholders communicate with the Board or its members or committees. There were no changes in this process in 2023 or as of the date hereof. Please refer to our website at www.biolifesolutions.com for any future changes in this process. The Board or the particular director or committee of the Board to which a communication is addressed will, if it deems appropriate, promptly refer the matter either to management or to the full Board depending on the nature of the communication.

Board Diversity Matrix

Board Diversity Matrix as of December 31, 2023

Total Number of Directors	6			
	Female	Male	Non-Binary	Did Not Disclose Gender
Part I: Gender Identity				
Directors				
Part II: Demographic Background				
African American or Black				
Alaskan Native or Native American				
Asian		1		
Hispanic or Latinx				
Native Hawaiian or Pacific Islander				
White	2	3		
Two or More Races or Ethnicities				
LGBTQ+				
Did Not Disclose Demographic Background				

ITEM 11. EXECUTIVE COMPENSATION

Compensation Committee report

The Compensation Committee of the Board, which is comprised solely of independent directors within the meaning of applicable rules of NASDAQ, outside directors within the meaning of Section 162(m) of the Internal Revenue Code of 1986, as amended (the "Code"), and non-employee directors within the meaning of Rule 16b-3 under the Exchange Act, is responsible for developing executive compensation policies and advising the Board with respect to such policies and administering the Company's cash and equity incentive plans. The Compensation Committee sets performance goals and objectives for the CEO and the other executive officers, evaluates their performance with respect to those goals and sets their compensation based upon the evaluation of their performance. In evaluating executive officer pay, the Compensation Committee may retain the services of a compensation consultant and consider recommendations from the CEO with respect to goals and compensation of the other executive officers. The Compensation Committee assesses the information it receives in accordance with its business judgment. The Compensation Committee also periodically reviews non-employee director compensation. All decisions with respect to executive compensation are approved by the Compensation Committee and all decisions with respect to director compensation are recommended by the Compensation Committee to the full Board for approval.

The Compensation Committee of the Company has reviewed and discussed the compensation discussion and analysis required by Item 402(b) of Regulation S-K with management and, based on such review and discussions, the Compensation Committee recommended to the Board that the compensation discussion and analysis be included in this document.

Respectfully submitted by the Compensation Committee:

Amy DuRoss, Chairperson
Joseph Schick
Rachel Ellingson
Timothy Moore

Compensation discussion and analysis

Our compensation discussion and analysis ("CD&A") describes our executive-compensation philosophy and program as reported in the executive compensation tables that follow, which provide information relating primarily to compensation decisions for the following 2023 named executive officers ("NEOs") of the Company:

Name	Position with the Company
Roderick de Greef[(1)]	Chief Executive Officer and Chairman of the Board
Michael Rice[(1)]	Former Chief Executive Officer and Chairman of the Board
Troy Wichterman	Chief Financial Officer
Aby J. Mathew, Ph.D.	Chief Scientific Officer and Executive Vice President
Geraint Phillips	Senior Vice President, Global Operations
Karen Foster	Chief Quality and Operations Officer

(1) As of October 19, 2023, Michael Rice resigned from his position as Chief Executive Officer and Chairman of the Board and the board appointed Roderick de Greef as successor. Mr. Rice is included as an NEO pursuant to Regulation S-K.

2023 year in review

For the fiscal year ended December 31, 2023, the macroeconomic environment created challenging headwinds for the CGT and broader biopharma industry, and, as a result, the Company did not achieve its financial goals for 2023. Factors contributing to the economic constraints within the industry included reduced spending across our customer base for both capital equipment and consumables in addition to destocking by our customers and distributors in our high margin cell processing products.

To navigate the financial challenges that arose from the macroeconomic conditions in 2023, we focused our efforts on managing our operating expenses through a reduction in workforce and limiting discretionary expenses in Q3, 2023. As announced in the third quarter of 2023, we determined that divesting our Freezer Businesses would optimize the performance of our product portfolio by focusing on recurring, higher margin revenue streams within our cell processing and biostorage services product lines. We anticipate the divestiture of the Freezer Businesses to conclude during the first half of 2024.

In continued efforts to manage our expenses given the economic circumstances our company faced during the year, the Board did not award cash bonuses to the executive team as the 2023 financial goals for the year had not been met. However, we are keenly focused on continuing to achieve our corporate goals in alignment with our broader purpose to return long-term value to our shareholders. We are confident the execution of the initiatives outlined above will increase our profitability through our focus on differentiated products suited to the complexities of manufacturing cell and gene therapies, and are in the best interest of the Company and our shareholders.

Compensation philosophy

The Company's compensation philosophy is to provide compensation that will attract and retain high-performing talent in our industry, motivate the Company's executive officers to create long-term, enhanced shareholder value and provide a fair reward for executive effort, and stimulate professional and personal growth. The Company believes that the compensation of its executive officers should align the executive officers' interests with those of the shareholders and focus executive officer behavior to achieve both near-term corporate goals and long-term business and strategies.

It is the responsibility of the Compensation Committee of the Board to administer the Company's compensation programs to ensure that they are competitive with other bioprocessing, life sciences, and biotechnology companies, and to include incentives that are designed to appropriately drive the Company's continued development to create shareholder value. The Compensation Committee reviews and approves all components of the Company's executive officer compensation, including base salaries, annual cash incentive compensation, and equity incentive compensation.

Compensation objectives

The Company's compensation programs for its executive officers are designed to provide the following:

- Salaries and total compensation that are competitive with other bioprocessing, life sciences, and biotechnology companies with which the Company competes for talent, determined by comparing the Company's pay practices

with these companies. The committee's objective is to align executive total annual compensation, including salary, cash bonus and long-term equity, near the 50th percentile of the Company's peer group.

- Equity incentive compensation, including market-based equity awards, to ensure that its executive officers are motivated over the long-term to respond to the Company's business challenges and opportunities as owners and not just as employees, thereby aligning the executive officers' interests with those of shareholders.
- Annual cash incentive compensation that motivates the executive officers to lead and manage the business to meet the Company's near-and long-term objectives.

The following features of our compensation programs are designed to protect and promote the interests of our shareholders while aligning executive compensation with performance. Below we summarize practices we follow to incentivize performance and retain leadership, and practices we do not follow because we do not believe they serve the long-term interests of our shareholders:

We Do	We Don't
Pay for Performance: We emphasize market-based compensation that aligns the interests of our shareholders and executive officers through the use of both near-term cash incentive compensation and long-term equity awards subject to both time and market-based vesting.	**Hedge or Pledge:** We do not allow executive officers to engage in hedging or pledging of our securities.
Benchmark: We maintain an industry-specific peer group for annual benchmarking of executive compensation. This benchmarking is a key factor among those used to determine appropriate compensation for our NEOs.	**Re-Pricing:** We do not allow re-pricing of underwater stock options without shareholder approval.
Benefits: We offer market-competitive benefits for executives that are consistent with the benefits we offer all our employees.	**Gross up Payments:** We do not provide excise tax gross-up payments for our executive officers.
Consult: We consistently engage an independent compensation consultant to advise on compensation levels and practices.	**Guaranteed Bonuses:** We do not provide guaranteed bonuses to our executive officers.
Risk Assessment: We perform an annual compensation risk assessment.	
Double Trigger: We provide each NEO severance benefits that are triggered only upon a termination of employment, including resignation for good reason, following a change-in-control (i.e., double trigger).	

Board and Compensation Committee consideration of shareholder advisory votes on compensation

In evaluating our executive compensation programs for the fiscal year ended December 31, 2023, the Compensation Committee considered the shareholder advisory vote on our executive compensation, (the "say-on-pay vote"), for the fiscal year ended December 31, 2022, which was approved by 74.2% of the votes cast.

The Compensation Committee determined that the structure of our executive compensation policies continues to be appropriately aligned to the achievement of Company goals and objectives and the best interests of shareholders. We believe that compensation program enhancements of the past several years, as well as our commitment to improved transparency in our CD&A disclosure, have resulted in a compensation program that best serves our Company, our executives, and our shareholders. The Compensation Committee values and continues to consider shareholder input and feedback, including the results of say-on-pay votes, on our compensation program structure.

Compensation evaluation process

The Company's executive officer compensation consists of three primary components: base salary, annual cash incentive compensation, and equity incentive compensation. Each of these components is intended to complement the others, and taken together, to satisfy the Company's compensation objectives. The Compensation Committee considers a number of factors in setting compensation for its executive officers, including Company performance, the executive's functional performance, experience and responsibilities, and the compensation of executive officers in similar positions in our peer group of companies.

Role of compensation consultant

In establishing compensation levels for each executive officer, the Compensation Committee has the authority to engage the services of outside experts. For analysis of the fiscal year ended December 31, 2023 executive compensation structure, the Compensation Committee retained FW Cook, an independent compensation consulting firm, to assist management in assessing and reporting to the Compensation Committee the competitiveness and effectiveness of the Company's executive compensation programs. In addition, our finance and human resources departments support management in their work and act in accordance with the direction given to them to administer our compensation programs.

Management has assessed any potential conflicts of interest raised by the work of FW Cook, our compensation consultant, pursuant to SEC rules and has determined that no such conflict of interest exists.

In December 2022, the Compensation Committee held meetings with management to review the reports prepared by FW Cook to:

- Review our compensation objectives
- Review the actual compensation of our executive officers for consistency with our objectives
- Analyze trends in executive compensation
- Assess our variable cash compensation structure, as well as incentive plan components and mechanics, to ensure an appropriate correlation between pay and performance with resulting compensation opportunities that balance returns to the Company and its shareholders
- Assess our equity-based awards programs against our objectives of executive incentive, retention, and alignment with shareholder interests
- Review our peer group and consider appropriate changes related to the realignment of our business
- Benchmark our executive cash compensation and equity-based awards programs, and assess our pay versus performance against our peer group
- Review recommendations for fiscal year 2023 compensation for appropriateness relative to our compensation objectives

Use of peer group to benchmark compensation

In December 2022, FW Cook provided management with an analysis of base salary, target bonus, target total cash, long-term incentive value and design, and target total compensation for executives, and cash and equity compensation for non-employee directors, of comparable companies in the bioprocessing, life sciences, and biotechnology industries. In performing this analysis, FW Cook used a peer group of 20 bioprocessing, life sciences, and biotechnology companies, which was reviewed and approved by management. As necessary, FW Cook, in conjunction with management, reevaluates our peer group in light of developments in the market and our industry. As a result of this review, three companies were added to the peer group and three companies were removed from the peer group compared to the prior report. The companies included in the peer group had revenues with a median of $215 million, as compared to the group's median revenue of $168 million in fiscal year 2022, when the evaluation was last completed.

The peer group used in the report presented for consideration of 2023 compensation decisions and approved by the management consisted of the following companies:

ANGO	AngioDynamics	CSII	Cardiovascular Systems, Inc	NSTG	NanoString Technologies, Inc.
HALO	Antares Pharma, Inc.[(1)]	CERS	Cerus Corporation	NVRO	NEVRO Corporation
AORT	Artivion	CDXS	Codexis, Inc.	MCRB	Seres Therapeutics
ATRI	Atrion Corporation	CYRX	Cryoport, Inc.	SILK	Silk Road Medical, Inc.
CDMO	Avid Bioservices, Inc.	GKOS	Glaukos Corporation	STAA	STAAR Surgical Company
AXGN	Axogen Corporation	IRTC	iRhythm Technologies, Inc.	VCYT	Veracyte, Inc.
AZTA	Azenta	MLAB	Mesa Laboratories, Inc.		

(1) Antares Pharma, Inc. was acquired by Halozyme (NASDAQ: HALO) as of May 2022.

The use of peer group compensation data is one of several factors in determining appropriate compensation parameters for base salary, variable cash compensation, and equity-based, long-term incentives. The Compensation Committee's

executive compensation decisions are made on a case-by-case basis, and specific benchmark results do not, in and of themselves, determine individual target compensation decisions.

While the Compensation Committee generally targets each NEO's total compensation to be near the 50th percentile of the peer group, it considers a number of additional factors to determine the appropriate level of each NEO's total compensation and each component of compensation, including Company performance and the relevant executive's performance, experience, responsibilities and impact. Due to these other factors, the Compensation Committee may set an NEO's compensation below, at, or above the 50th percentile of the peer group.

Annual review of long-term incentives

The Compensation Committee believes that equity incentives in the form of restricted stock awards, subject to vesting over time or upon achievement of performance or market-based objectives, are effective vehicles to align individual and team performance with the achievement of the Company's strategic and financial goals over time, retain our NEOs, and align the interests of our NEOs with those of our shareholders.

In January 2023, the Compensation Committee granted to the NEOs, service vesting-based restricted stock awards which vest over a four-year period, and market-based restricted stock awards which contain a market condition based on Total Shareholder Return ("TSR"). The TSR market condition measures the Company's performance against a peer group. The market-based restricted stock awards will vest as to between 0% and 200% of the number of restricted shares granted to each recipient based on our total shareholder return during the period beginning on January 1, 2023 through December 31, 2024 as compared to the total shareholder return of our 20 company peer group. The size of these grants is based on target long-term incentive levels for each of the NEOs.

Executive compensation

Base salary

Base salary represents the fixed portion of an executive officer's compensation and is intended to provide compensation for day-to-day performance. The Compensation Committee believes that a competitive base salary is a necessary element of any compensation program that is designed to attract and retain talented and experienced executives. Each executive officer's base salary is initially determined upon hire or promotion based on the executive officer's responsibilities, prior experience, individual compensation history and salary levels of other executives within the Company and similarly situated executives within our peer group. Base salary is typically reviewed annually. The Compensation Committee believes that the base salaries paid to our executive officers during the fiscal year ended December 31, 2023 achieved the Company's compensation objectives. Base salaries for the named executive officers for 2023, 2022 and 2021 are as follows:

Name	2023 Base Salary ($) (1)	2022 Base Salary ($) (1)	2021 Base Salary ($) (1)	Base Salary Increase in 2023 vs 2022 (%)	Base Salary Increase in 2022 vs 2021 (%)
Roderick de Greef[(2)]	744,450	450,000	412,137	65	9
Michael Rice[(2)]	709,000	645,000	641,019	10	1
Aby J Mathew	435,000	419,750	419,750	4	—
Troy Wichterman	472,000	375,000	249,077	26	50
Geraint Phillips	380,000	300,000	237,415	27	25
Karen Foster	382,000	356,500	356,500	7	—

(1) These base salary increases were based on each named executive officer's performance, qualifications, experience, responsibilities, and FW Cook's survey of the publicly disclosed compensation for similar positions at companies in the peer group.

(2) The 2023 base salaries presented here are reflecting the annual salaries outlined within the employment agreements of each respective NEO. The actual salary earned by each NEO is presented within the Summary compensation table as both did not serve in their position for the entirety of 2023.

Annual cash incentive compensation (short-term incentive) plan

In 2023, as in prior years, executives were eligible for bonuses, as approved by the Compensation Committee and the Board, with pre-established goals and weightings, which was designed to reward achievements based upon quantitative and qualitative Company performance (the "Company Objectives"), and to incentivize and reward NEOs for achieving performance goals that drive Company performance, align pay and performance, and support the long-term growth of the Company.

All NEO incentive payouts are calculated based solely on Company Objectives to closely align compensation with the Company's performance. The Compensation Committee determines each NEO's annual cash incentive compensation after the end of each fiscal year, which is calculated as a percentage of the executive officer's target annual cash incentive compensation ("Target Award"). The Compensation Committee establishes each NEOs Target Award at a level that represents a meaningful portion of each NEOs cash compensation. In addition, the Compensation Committee sets thresholds, target, and maximum performance goals, and related payout levels, considering annual cash incentive compensation levels for comparable positions within our peer group and our own historical practices. An NEO could earn between 0% and 110% of the NEOs Target Award for achievement of Corporate Objectives, dependent upon the level of achieved performance.

Annual cash incentive compensation (short-term incentive) plan protocol

The Compensation Committee administers the Plan:

1. At the beginning of the fiscal year, the CEO, with assistance from senior management, proposes annual Company Objectives, measurement criteria and weightings, subject to review and approval by the Compensation Committee.
2. At the beginning of the following fiscal year, the CEO and CFO evaluate performance levels and the achievement of these annual Company Objectives, which are subject to review and approval by the Compensation Committee. Specific bonus award recommendations for all participants are submitted by the CEO to the Compensation Committee for review and approval.
3. The Compensation Committee determines the bonus awards for individual participants based on the Target Awards and the Company's performance against the Company Objectives.

Summary of 2023 performance measure and goals

The Compensation Committee may, at its discretion, elect to adjust bonuses or not to pay bonuses at all. A Target Award and the weight assigned to Company Objectives are determined based upon competitive market data derived from our peer group. The final incentive payout is determined based on the achievement of Company Objectives defined for each organizational level and position and the Target Award.

Our Company is focused on driving above-industry level growth through internal innovation, acquisitions, and expansion of applications for our products and services. With our focus on revenue growth, gross margin improvements, and positive adjusted EBITDA, we believe that revenue, gross margin, and Adjusted EBITDA are relevant metrics to reflect success. Revenue was the highest weighted Company Objective, and the remaining weighting was attributed to each of the other Company Objectives as recommended by management and approved by the Compensation Committee. We believe these are objectives that our executive team can directly impact, and that drive shareholder value.

For the 2023 Plan, the Compensation Committee set the following Company Objectives and related payout levels:

- **Revenue (60%):** For 2023, the revenue target was set at $194 million, which if achieved, would result in a payout of 60% of each NEOs Target Award. If the Company achieved revenues of $200 million, a 20% increase of payout would result and each NEOs Target Award would be paid at 72% with respect to the revenue metric. If achieved performance was below $194 million but at or above $186 million, a 20% reduction of payout would result and each NEOs Target Award would be paid at 48% with respect to the revenue metric. If achieved performance was below $186 million, then no payout would be made to the NEOs with respect to the revenue metric.
- **Adjusted Gross Margin[(1)] (20%)**: For 2023, the adjusted gross margin target was set at 38%, which if achieved, would result in a payout of 20% of each NEOs Target Award. If the Company achieved adjusted gross margin of 40%, a 20% increase of payout would result and each NEOs Target Award would be paid at 24% with respect to the adjusted gross margin metric. If achieved performance was below 38% but at or above 36%, a 20% reduction of payout would result and each NEOs Target Award would be paid at 16% with respect to the adjusted gross margin

metric. If achieved performance was below 36%, then no payout would be made to the NEOs with respect to the adjusted gross margin metric.

- **Adjusted EBITDA[(1)] (20%)**: For 2023, the adjusted EBITDA target was set at 8% of revenues, which if achieved, would result in a payout of 20% of each NEOs Target Award with respect to the adjusted EBITDA metric. If the Company achieved adjusted EBITDA of 10% of revenues, a 20% increase of payout would result and each NEOs Target Award would be paid at 24% with respect to the adjusted EBITDA metric. If achieved performance was below 8% of revenues but at or above 6% of revenues, a 20% reduction of payout would result and each NEOs Target Award would be paid at 16% with respect to the adjusted EBITDA metric. If achieved performance was below 6% of revenues, then no payout would be made to the NEOs with respect to the adjusted EBITDA metric.

(1) Adjusted Gross Margin and Adjusted EBITDA are non-GAAP metrics. A reconciliation of these metrics is provided below.

Non-GAAP metric reconciliation tables

Our Target Awards include the calculation of non-GAAP financial measures in which we believe provide useful information for evaluating business performance. When analyzing the Company's operating results, investors should not consider non-GAAP measures as substitutes for the comparable financial measures prepared in accordance with GAAP.

Adjusted gross margin reconciliation

	Year Ended December 31,		
	2023	**2022**	**2021**
GAAP total revenues	$ 143,271	$ 161,759	$ 119,156
GAAP cost of revenues	(96,519)	(107,937)	(82,108)
COGS intangible asset amortization	(2,781)	(5,007)	(4,557)
GAAP GROSS PROFIT	$ 43,971	$ 48,815	$ 32,491
GAAP GROSS MARGIN	30.7 %	30.2 %	27.3 %
ADJUSTMENTS TO GROSS PROFIT:			
Inventory step-up	—	251	1,130
Inventory reserve costs	2,334	—	—
Loss on disposal of assets	286	—	—
Intangible asset amortization	2,781	5,007	4,557
ADJUSTED GROSS PROFIT	$ 49,372	$ 54,073	$ 38,178
ADJUSTED GROSS MARGIN	34.5 %	33.4 %	32.0 %

Adjusted EBITDA reconciliation

	Year Ended December 31,		
	2023	**2022**	**2021**
GAAP NET (LOSS) / INCOME	$ (66,427)	$ (139,805)	$ (8,908)
ADJUSTMENTS:			
Interest expense, net	1,812	687	485
Income tax (expense) benefit	169	(5,022)	(20,118)
Depreciation	7,126	6,834	4,800
Intangible asset amortization	5,181	9,697	8,202
EBITDA	$ (52,139)	$ (127,609)	$ (15,539)
Share-based compensation (non-cash)	31,670	25,334	13,974
Inventory step-up	—	251	1,130
Acquisition and divestiture costs	3,226	18	1,636
Severance costs	1,591	—	—
Loss (gain) on disposal of assets	477	683	(145)
Change in fair value of investments	—	(697)	—
Change in fair value of contingent consideration	(2,193)	(4,754)	2,875
Change in fair value of warrant liability	—	—	121
Gain on settlement of Global Cooling escrow	(5,115)	—	—
Asset impairment charges	15,485	110,364	—
Inventory reserve costs	2,334	—	—
ADJUSTED EBITDA[(1)]	$ (4,664)	$ 3,590	$ 4,052
ADJUSTED EBITDA as a percentage of total revenues	(3.3 %)	2.2 %	3.4 %

(1) Adjusted EBITDA excluded executive bonuses from GAAP operating expenses to determine target award percentage.

Individual annual cash incentive targets

For the fiscal year ended December 31, 2023, the Company established a Target Award for each NEO Company Objectives, which are set forth below:

Name	**Target Award as % of Salary for the Fiscal Year Ended December 31, 2023**	**Portion Tied to Company Objectives (%)**
Roderick de Greef	100	100
Michael Rice	100	100
Aby J Mathew	45	100
Troy Wichterman	60	100
Geraint Phillips	55	100
Karen Foster	45	100

Performance against 2023 company objectives

The following table summarizes the performance of the Company against its Objectives for the fiscal year ended December 31, 2023:

Company Objectives for the Fiscal Year Ended December 31, 2023	
Revenue target	Revenues of $143.3 million did not meet threshold
Adjusted Gross Margin target	Adjusted Gross Margin of 34.5% did not meet threshold
Adjusted EBITDA target	Adjusted EBITDA of (3.3%) did not meet threshold

Annual bonus incentive payments under the plan

As stated above, the Company did not achieve its financial goals for 2023. As a result, the Compensation Committee did not award bonus payouts to NEOs.

Objectives for the fiscal year ending December 31, 2024

Our annual cash incentive compensation plan for the fiscal year ending December 31, 2024 is generally consistent with the program for the fiscal year ended December 31, 2023. The Compensation Committee, after reviewing assessments provided by management along with market data from FW Cook, determined each NEOs Target Award percentage of salary for the fiscal year 2024. Company Objectives, including revenue, adjusted gross margin, adjusted EBITDA, remediation of material weaknesses, system implementation metrics, and weightings were established to determine threshold, target, and maximum performance goals for the 2024 annual bonus.

Equity incentive compensation

The Compensation Committee believes that equity incentives in the form of service vesting-based restricted stock awards and market-based restricted stock awards are effective instruments for long-term compensation. Equity incentives align individual and team performance with the achievement of the Company's strategic and financial goals, long-term value creation, and shareholders' interests. Restricted stock awards are impacted by all stock price changes, so the value to the executive officers is affected by both increases and decreases in stock price from the market price at the date of grant.

For the fiscal year ended December 31, 2023, the Compensation Committee considered a number of factors in determining what, if any, equity incentive compensation to grant to the executive officers, including:

- the performance of the Company during the fiscal year
- the number of shares subject to, and exercise price of, outstanding options held by the executive officers
- the number of restricted stock units held by the executive officers
- the vesting schedule of the unvested equity awards held by the executive officers
- the financial statement impact of any equity award
- the amount and percentage of the total equity on a diluted basis held by the executive officers
- the available shares under the Company's equity incentive plan

The target split of the long-term equity incentive compensation awards made to our NEOs, based upon dollar value, is 50% market-based, and 50% service vesting-based restricted stock awards. We granted our NEOs these equity incentive instruments in 2023, 2022 and 2021 and we anticipate that we will continue to include these grants as part of our long-term incentive compensation program going forward for the reasons noted above.

In January 2023, the Compensation Committee granted the following long-term incentive compensation awards to each of the named executive officers of the Company. These awards are split based upon dollar value between service vesting-based restricted stock awards (50%) and market-based restricted stock awards (50%).

Name	Service-vesting based stock awards (#)	Market-based Stock Units (#)
Roderick de Greef[1]	—	—
Michael Rice[2]	99,038	99,038
Aby J Mathew	20,940	20,940
Troy Wichterman	34,296	34,296
Geraint Phillips	21,223	21,223
Karen Foster	16,978	16,978

(1) As of the date of grant for the long-term incentive compensation awards, Mr. de Greef was a member of the Board of Directors and therefore did not receive the award above designated to the NEOs. However, Mr. de Greef was awarded 394,856 shares, vesting annually in four equal parts, upon appointment to Chief Executive Officer on October 19, 2023. All awarded shares were service-vesting based. Further details on all shares awarded are within the *Grants of plan-based awards* table below.

(2) Upon Mr. Rice's resignation on October 19, 2023, all service-vesting based shares, both vested and unvested, were accelerated. Only Mr. Rice's market-based stock granted during 2022 and 2023, which were 70,094 and 99,038 market-based shares, respectively, remain active and will vest only upon the achievement of the Company's performance against the 20 company peer group during the periods of January 1, 2022 through December 31, 2023 and January 1, 2023 through December 31, 2024, respectively.

Service vesting-based equity awards granted in 2023 will vest one-quarter of the shares in one year with the remainder vesting quarterly over three years. Market-based restricted stock awards contain a market condition based on Total Shareholder Return ("TSR"). The TSR market condition measures the Company's performance against a peer group. The market-based restricted stock awards will vest as to between 0% and 200% of the number of restricted shares granted to each recipient based on our total shareholder return during the period beginning on January 1, 2023 through December 31, 2024 as compared to the total shareholder return of our 20 company peer group.

2024 long-term equity incentive compensation

In January 2024, the Compensation Committee granted long-term incentive compensation awards to each of the NEOs of the Company. Consistent with the Company's compensation philosophy and objectives, as described above, these awards are split based upon dollar value between service vesting-based restricted stock (50%) and market-based restricted stock (50%), all of which are subject to similar vesting conditions to comparable service vesting-based and market-based instruments awarded by BioLife as discussed above.

Other compensation

All full-time employees, including the executive officers, are eligible to participate in the health benefits programs, including medical, dental and vision care coverage, disability and life insurance and the Company's 401(k) plan. Under the 401(k) plan, the Company matches 100% of the first 4% of eligible compensation contributed by employees. Additionally, the Company reimburses the Chief Executive Officer for travel expenses and additional tax gross up payments to cover travel costs between the corporate headquarters and their personal residence.

Termination and change of control provisions

We have entered into agreements with our NEOs that provide certain benefits if employment is terminated under certain circumstances, including under certain circumstances in connection with a change of control. We believe that these protections serve our retention objectives by permitting our NEOs to maintain continued focus and dedication to their responsibilities in order to maximize shareholder value, including in the event of a transaction that could result in a change of control of the Company. We believe that these protections promote the stability, continuity and impartiality of our executives in a change of control situation.

Tax and accounting considerations

We have not provided or agreed to provide any of the Company's executive officers or directors with a gross-up or other reimbursement for tax amounts they might pay pursuant to Section 4999 or Section 409A of the Code. Sections 280G and 4999 of the Code provide that executive officers, directors who hold significant shareholder interests and certain other service providers could be subject to significant additional taxes if they receive payments or benefits in connection with a change in control of the Company that exceed certain limits, and that we or our successor could lose a deduction on the amounts subject to the additional tax. Section 409A also imposes additional significant taxes on the individual in the event that an employee, director or service provider receives "deferred compensation" that is not exempt from or does not meet the requirements of Section 409A.

For the Company's financial statements, cash compensation, such as salary and bonus, is expensed and for income tax returns, cash compensation is generally deductible except as set forth below. For equity-based compensation, we expense the fair value of such grants over the requisite service period.

Generally, Section 162(m) of the Code disallows a federal income tax deduction for public corporations of remuneration in excess of $1 million paid for any fiscal year to its chief executive officer, chief financial officer, and certain other current and former highly compensated employees that qualify as "covered employees" within the meaning of Section 162(m). The Compensation Committee believes that shareholder interests are best served if the Compensation Committee retains maximum flexibility to design executive compensation programs that meet stated business objectives. For these reasons, the Compensation Committee, while considering tax deductibility as a factor in determining executive compensation, may not limit such compensation to those levels that will be deductible.

Incentive compensation clawback policy

As required by the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 (Dodd-Frank Act), we maintain a clawback policy, which requires that certain incentive compensation paid to any current or former executive officer, including our NEOs, will be subject to recoupment if (x) the incentive compensation was calculated based on financial statements that were required to be restated due to material noncompliance with financial reporting requirements, without regard to any fault or misconduct, and (y) that noncompliance resulted in overpayment of the incentive compensation within the three fiscal years preceding the fiscal year in which the restatement was required. Incentive compensation subject to the clawback policy consists of compensation that is granted, earned or vested based wholly or in part upon the attainment of a financial reporting measure (as defined in the rules implementing such requirement), including stock price and total shareholder return, on and after October 2, 2023.

Compensation risk assessment

The Compensation Committee not only considers and evaluates risks related to the Company's cash and equity-based compensation programs and practices, but also evaluates whether the Company's compensation plans encourage participants to take excessive risks that are reasonably likely to have a material adverse effect on the Company. Consistent with SEC disclosure requirements, the Compensation Committee has worked with management to assess compensation policies and practices for Company employees and has concluded that such policies and practices do not create risks that are reasonably likely to have a material adverse effect on the Company.

Executive compensation tables

Summary compensation table

The following table summarizes the compensation earned during the fiscal years ended December 31, 2023, 2022, and 2021 by the Company's named executive officers, as such officers are determined in accordance with Regulation S-K (each referred to herein as a "named executive officer" or "NEO").

Name and Principal Positions (a)	Year (b)	Salary ($) (c)(1)	Bonus ($) (d)	Stock Awards ($) (e)(2)	Non-Equity Incentive Plan Compensation ($) (f)(3)	All Other Compensation ($) (g)	Total ($) (h)
Roderick de Greef	2023	198,890 (4)	62,740 (5)	4,588,883 (6)	—	466,285 (7)	5,316,798
Chief Executive Officer and	2022	450,000	—	1,747,823 (8)	185,850	—	2,383,673
Chairman of the Board	2021	412,137	—	544,603 (9)	223,850	—	1,180,590
Michael Rice	2023	567,200 (10)	—	3,603,003 (11)	—	730,252 (12)	4,900,455
Former Chief Executive Officer	2022	645,000	—	3,703,620 (13)	380,550	—	4,729,170
and Chairman of the Board	2021	641,019	—	1,005,813 (14)	603,075	—	2,249,907
Aby J. Mathew	2023	435,000	—	897,488 (15)	—	13,200 (16)	1,345,688
Executive Vice President and	2022	419,750	—	1,155,834 (17)	111,510	12,200	1,699,294
Chief Scientific Officer	2021	419,750	—	579,568 (18)	207,776	11,266	1,218,360
Troy Wichterman	2023	472,000	—	1,212,021 (19)	—	13,200 (20)	1,697,221
Chief Financial Officer	2022	375,000	—	1,245,968 (21)	121,688	12,200	1,754,856
	2021	249,077	—	280,024 (22)	30,000	11,463	570,564
Geraint Phillips	2023	380,000	—	909,617 (23)	—	13,200 (24)	1,302,817
Senior Vice President	2022	300,000	—	482,254 (25)	45,600	12,200	840,054
Global Operations	2021	237,415	—	266,023 (26)	—	—	503,438
Karen Foster	2023	382,000	—	727,677 (27)	—	13,200 (28)	1,122,877
Chief Quality and Operations	2022	356,500	—	891,900 (29)	84,252	12,200	1,344,852
Officer	2021	356,500	—	492,530 (30)	156,860	11,518	1,017,408

(1) Reflects base salary earned in each applicable period.

(2) Represents the the aggregate grant-date fair value of restricted stock measured in accordance with ASC Topic 718, excluding the effect of estimated forfeitures. The assumptions used in the valuation are consistent with the valuation methodologies specified in the notes to our consolidated financial statements included in this Form 10-K.

(3) The named executive officers' Cash Incentive Plan awards are based on the performance of the Company relative to predetermined financial goals (Company Objectives) that closely align compensation with the Company's performance. The threshold, target, and maximum payout amounts for each named executive officer's Cash Incentive Plan payout opportunity for 2023 are shown in the table entitled *Grants of Plan-Based Awards* table below.

(4) The base salary reflected here is prorated for the period in which Mr. de Greef served as Chief Executive Officer. Mr. de Greef was appointed on October 19, 2023 to the position at a base salary of $744,450. The base salary presented reflects his service as CEO from his date of appointment through December 31, 2023. Mr. de Greef's salary also reflects his board retainer compensation for services performed as a Board Member from January 4, 2023 through October 18, 2023.

(5) This bonus reflects Mr. de Greef's extraordinary award provided by the BOD for extraordinary services as a director upon his appointment to Chief Executive Officer and Chairman on October 19, 2023.

(6) Represents the grant-date fair value of 394,856 service vesting-based restricted stock granted on October 19, 2023. The service vesting-based restricted stock award granted October 19, 2023 will vest 1/4 of the shares annually over 4 years so long as Mr. de Greef remains employed by the Company through such date, provided that all unvested shares as of January 1, 2027 shall fully vest. The total fair value of shares awarded reflected here do not reflect the fair value of shares awarded to Mr. de Greef during his service as a Director on the BOD from January 4, 2023 through October 18, 2023. These shares are reflected in the Director compensation section below.

(7) This amount represents the $450,000 severance Mr. de Greef received upon his retirement from the Company on January 3, 2023 prior to being appointed to the BOD and subsequently reappointed to Chief Executive Officer as of October 19, 2023. The amount also includes $16,285 of travel expense reimbursement provided to Mr. de Greef for travel between his personal residence and corporate headquarters in Bothell, Washington. Per his employment agreement, Mr. de Greef is eligible for up to $75,000 in travel expense reimbursement each year.

(8) Represents fair value of 23,365 service vesting-based restricted stock and 23,365 market-based restricted stock granted on February 24, 2022, 12,068 service vesting-based restricted stock awards granted on January 3, 2022, and 5,882 service vesting-based restricted stock awards granted in lieu of salary on various dates from May 2022 through August 2022. The service vesting-based restricted stock award granted February 24, 2022 will vest 1/4 of the shares on February 24, 2023 with the remainder vesting quarterly over 3 years. The market-based restricted stock awards will vest as to between 0% and 200% of the number of restricted shares granted to each recipient based on our total shareholder return during the period beginning on January 1, 2022 through December 31, 2023 as compared to the total shareholder return of our 20 company peer group. The service vesting-based restricted award granted on January 3, 2022 vested 1/4 each quarter end during 2022 and was fully vested on December 31, 2022.

(9) Represents fair value of 4,740 service vesting-based restricted stock and 4,740 market-based restricted stock granted on February 8, 2021, and 3,222 service vesting-based restricted stock granted on April 12, 2021. The service vesting-based restricted stock award granted February 8, 2021 vests in 4 quarterly increments beginning on January 1, 2022, provided that Mr. de Greef continues to be employed with BioLife through the vesting dates. The market-based restricted stock awards will vest as to between 0% and 200% of the number of restricted shares granted to each recipient based on our total shareholder return during the period beginning on January 1, 2021 through December 31, 2022 as compared to the total shareholder return of our 20 company peer group. The service vesting-based restricted award granted April 12, 2021 fully vested October 12, 2021.

(10) The base salary reflected here is prorated for the period in which Mr. Rice served as Chief Executive Officer. Mr. Rice retired from his position on October 19, 2023, which had a base salary of $709,000. The base salary presented reflects his service as CEO from January 1, 2023 through his date of retirement.

(11) Represents fair value of 99,038 service vesting-based restricted stock and 99,038 market-based restricted stock granted on January 8, 2023. The service vesting-based restricted stock award granted January 8, 2023 was accelerated and fully vested as of Mr. Rice's retirement date of October 19, 2023. The market-based restricted stock awards will vest as to between 0% and 200% of the number of restricted shares granted to each recipient based on our total shareholder return during the period beginning on January 1, 2023 through December 31, 2024 as compared to the total shareholder return of our 20 company peer group.

(12) Represents the severance paid out to Mr. Rice upon his resignation from the Company on October 19, 2023.

(13) Represents fair value of 70,094 service vesting-based restricted stock and 70,094 market-based restricted stock granted on February 24, 2022, and 5,537 service vesting-based restricted stock awards granted in lieu of salary on various dates from May 2022 through August 2022. The service vesting-based restricted stock award granted February 24, 2022 vested 1/4 of the shares on February 24, 2023 with the remainder vesting quarterly over 3 years. The market-based restricted stock awards will vest as to between 0% and 200% of the number of restricted shares granted to each recipient based on our total shareholder return during the period beginning on January 1, 2022 through December 31, 2023 as compared to the total shareholder return of our 20 company peer group.

(14) Represents fair value of 7,511 service vesting-based restricted stock and 7,511 market-based restricted stock granted on February 8, 2021, and 8,487 service vesting-based restricted stock granted on April 12, 2021. The service vesting-based restricted stock award granted February 8, 2021 vested 1/4 of the shares on February 8, 2022 with the remainder vesting quarterly over 3 years. The service vesting-based restricted award granted April 12, 2021 fully vested October 12, 2021. The market-based restricted stock awards will vest as to between 0% and 200% of the number of restricted shares granted to each recipient based on our total shareholder return during the period beginning on January 1, 2021 through December 31, 2022 as compared to the total shareholder return of our 20 company peer group. The performance-based restricted stock vested at 100% of the

number of restricted shares granted to each recipient based on achievement of specified performance metrics approved by the Compensation Committee.

(15) Represents fair value of 20,940 service vesting-based restricted stock and 20,940 market-based restricted stock granted on January 8, 2023. The service vesting-based restricted stock award granted January 8, 2023 vested 1/4 of the shares on January 3, 2024 with the remainder vesting quarterly over 3 years. The market-based restricted stock awards will vest as to between 0% and 200% of the number of restricted shares granted to each recipient based on our total shareholder return during the period beginning on January 1, 2023 through December 31, 2024 as compared to the total shareholder return of our 20 company peer group.

(16) This amount represents the match paid by the Company on behalf of such individual into the Company 401(k) plan on 100% of the first 4% of eligible compensation contributed by such individual during the fiscal year 2023.

(17) Represents fair value of 21,029 service vesting-based restricted stock and 21,029 market-based restricted stock granted on February 24, 2022, and 4,514 service vesting-based restricted stock awards granted in lieu of salary on various dates from May 2022 through August 2022. The service vesting-based restricted stock award granted February 24, 2022 vested 1/4 of the shares on February 24, 2023 with the remainder vesting quarterly over 3 years. The market-based restricted stock awards will vest as to between 0% and 200% of the number of restricted shares granted to each recipient based on our total shareholder return during the period beginning on January 1, 2022 through December 31, 2023 as compared to the total shareholder return of our 20 company peer group.

(18) Represents fair value of 4,891 service vesting-based restricted stock and 4,891 market-based restricted stock granted on February 8, 2021, and 3,360 service vesting-based restricted stock granted on April 12, 2021. The service vesting-based restricted stock award granted February 8, 2021 vested 1/4 of the shares on February 8, 2022 with the remainder vesting quarterly over 3 years. The service vesting-based restricted award granted April 12, 2021 fully vested October 12, 2021. The market-based restricted stock awards will vest as to between 0% and 200% of the number of restricted shares granted to each recipient based on our total shareholder return during the period beginning on January 1, 2021 through December 31, 2022 as compared to the total shareholder return of our 20 company peer group. The performance-based restricted stock vested at 100% of the number of restricted shares granted to each recipient based on achievement of specified performance metrics approved by the Compensation Committee.

(19) Represents fair value of 34,296 service vesting-based restricted stock and 34,296 market-based restricted stock granted on January 8, 2023. The service vesting-based restricted stock award granted January 8, 2023 vested 1/4 of the shares on January 3, 2024 with the remainder vesting quarterly over 3 years. The market-based restricted stock awards will vest as to between 0% and 200% of the number of restricted shares granted to each recipient based on our total shareholder return during the period beginning on January 1, 2023 through December 31, 2024 as compared to the total shareholder return of our 20 company peer group.

(20) This amount represents the match paid by the Company on behalf of such individual into the Company 401(k) plan on 100% of the first 4% of eligible compensation contributed by such individual during the fiscal year 2023.

(21) Represents fair value of 23,365 service vesting-based restricted stock and 23,365 market-based restricted stock granted on February 24, 2022, and 2,574 service vesting-based restricted stock awards granted in lieu of salary on various dates from May 2022 through August 2022. The service vesting-based restricted stock award granted February 24, 2022 vested 1/4 of the shares on February 24, 2023 with the remainder vesting quarterly over 3 years. The market-based restricted stock awards will vest as to between 0% and 200% of the number of restricted shares granted to each recipient based on our total shareholder return during the period beginning on January 1, 2022 through December 31, 2023 as compared to the total shareholder return of our 20 company peer group.

(22) Represents fair value of 5,680 service vesting-based restricted stock granted on August 9, 2021. The service vesting-based stock award vested 1/4 of the shares on August 9, 2022 with the remainder vesting quarterly over 3 years.

(23) Represents fair value of 21,223 service vesting-based restricted stock and 21,223 market-based restricted stock granted on January 8, 2023. The service vesting-based restricted stock award granted January 8, 2023 vested 1/4 of the shares on January 3, 2024 with the remainder vesting quarterly over 3 years. The market-based restricted stock awards will vest as to between 0% and 200% of the number of restricted shares granted to each recipient based on our total shareholder return during the period beginning on January 1, 2023 through December 31, 2024 as compared to the total shareholder return of our 20 company peer group.

(24) This amount represents the match paid by the Company on behalf of such individual into the Company 401(k) plan on 100% of the first 4% of eligible compensation contributed by such individual during the fiscal year 2023.

(25) Represents fair value of 9,346 service vesting-based restricted stock and 9,346 market-based restricted stock granted on February 24, 2022. The service vesting-based restricted stock award granted February 24, 2022 vested 1/4 of the shares on February 24, 2023 with the remainder vesting quarterly over 3 years. The market-based restricted stock awards will vest as to between 0% and 200% of the number of restricted shares granted to each recipient based on our total shareholder return during the period beginning on January 1, 2022 through December 31, 2023 as compared to the total shareholder return of our 20 company peer group.

(26) Represents fair value of 5,396 service vesting-based restricted stock granted to Mr. Phillip's on August 9, 2021 at the discretion of the Compensation Committee upon the closing of the acquisition of Global Cooling, Inc. The service vesting-based restricted stock award granted August 9, 2021 vested 1/4 of the shares on August 9, 2022 with the remainder vesting quarterly over 3 years.

(27) Represents fair value of 16,978 service vesting-based restricted stock and 16,978 market-based restricted stock granted on January 8, 2023. The service vesting-based restricted stock award granted January 8, 2023 vested 1/4 of the shares on January 3, 2024 with the remainder vesting quarterly over 3 years. The market-based restricted stock awards will vest as to between 0% and 200% of the number of restricted shares granted to each recipient based on our total shareholder return during the period beginning on January 1, 2023 through December 31, 2024 as compared to the total shareholder return of our 20 company peer group.

(28) This amount represents the match paid by the Company on behalf of such individual into the Company 401(k) plan on 100% of the first 4% of eligible compensation contributed by such individual during the fiscal year 2023.

(29) Represents fair value of 16,536 service vesting-based restricted stock and 16,536 market-based restricted stock granted on February 24, 2022 and 3,059 service vesting-based restricted stock awards granted in lieu of salary on various dates from May 2022 through August 2022. The service vesting-based restricted stock award granted February 24, 2022 vested 1/4 of the shares on February 24, 2023 with the remainder vesting quarterly over 3 years. The market-based restricted stock awards will vest as to between 0% and 200% of the number of restricted shares granted to each recipient based on our total shareholder return during the period beginning on January 1, 2022 through December 31, 2023 as compared to the total shareholder return of our 20 company peer group.

(30) Represents fair value of 4,157 service vesting-based restricted stock and 4,157 market-based restricted stock granted on February 8, 2021 and 2,854 service vesting-based restricted stock granted on April 12, 2021. The service vesting-based restricted stock award granted February 8, 2021 vested 1/4 of the shares on February 8, 2022 with the remainder vesting quarterly over 3 years. The service vesting-based restricted award granted April 12, 2021 fully vested October 12, 2021. The market-based restricted stock awards will vest as to between 0% and 200% of the number of restricted shares granted to each recipient based on our total shareholder return during the period beginning on January 1, 2021 through December 31, 2022 as compared to the total shareholder return of our 20 company peer group. The performance-based restricted stock vested at 100% of the number of restricted shares granted to each recipient based on achievement of specified performance metrics approved by the Compensation Committee.

The following table reflects the allocation of base salary, cash incentive compensation, equity incentive compensation, and other compensation earned by the Company's NEOs in the fiscal year 2023 as set forth in the 2023 Summary Compensation Table above.

Name	Long-Term Incentives (%)	Short-Term Incentives (%)	Base Salary (%)	Total Compensation ($)
Roderick de Greef	86	10	4	5,316,798
Michael Rice	74	14	12	4,900,455
Aby J Mathew	68	—	32	1,345,688
Troy Wichterman	71	—	29	1,697,221
Geraint Phillips	70	—	30	1,302,817
Karen Foster	66	—	34	1,122,877

Grants of plan-based awards

The following table sets forth certain information regarding each grant of plan-based awards made to a named executive officer in the last completed fiscal year under any plan, including awards that subsequently have been transferred.

			Estimated Future Payouts Under Non-Equity Incentive Plan Awards			Estimated Future Payouts Under Equity Incentive Plan Awards			All Other Stock Awards: Number of	Grant Date Fair Value of
Name (a)	Award Type	Grant Date (b)	Threshold (#) (c)	Target (#) (d)	Maximum (#) (e)	Threshold (#) (c)	Target (#) (d)	Maximum (#) (e)	Shares of Stock or Units (#) (e)	Stock Awards ($) (f) (1)
Roderick de Greef	Cash incentive	-	119,112	744,450	893,340	—	—	—	—	—
Roderick de Greef	Service-vesting RSUs	10/19/2023				—	—	—	394,856	4,418,439
Roderick de Greef	Service-vesting RSUs	1/3/2023				—	—	—	9,646	170,445
Roderick de Greef	In lieu of director fees	10/1/2023(2)				—	—	—	362	4,999
Michael Rice	Market-based RSUs	1/3/2023				—	99,038	198,076	—	2,494,767
Michael Rice	Service-vesting RSUs	1/3/2023				—	—	—	99,038	1,108,235
Michael Rice	In lieu of salary	8/25/2023(2)				—	—	—	1,248	13,628
Michael Rice	In lieu of salary	9/8/2023(2)				—	—	—	1,022	13,623
Michael Rice	In lieu of salary	9/22/2023(2)				—	—	—	290	3,814
Michael Rice	In lieu of salary	10/6/2023(2)				—	—	—	282	3,818
Michael Rice	In lieu of salary	10/20/2023(2)				—	—	—	771	7,864
Aby J. Mathew	Cash incentive	-	31,320	195,750	234,900	—	—	—	—	—
Aby J. Mathew	Market-based RSUs	1/3/2023				—	20,940	41,880	—	527,479
Aby J. Mathew	Service-vesting RSUs	1/3/2023				—	—	—	20,940	370,010
Aby J. Mathew	In lieu of salary	8/25/2023(2)				—	—	—	966	10,549
Aby J. Mathew	In lieu of salary	9/8/2023(2)				—	—	—	792	10,557
Aby J. Mathew	In lieu of salary	9/22/2023(2)				—	—	—	802	10,546
Aby J. Mathew	In lieu of salary	10/6/2023(2)				—	—	—	779	10,548
Aby J. Mathew	In lieu of salary	10/20/2023(2)				—	—	—	1,034	10,547
Aby J. Mathew	In lieu of salary	11/3/2023(2)				—	—	—	924	10,552
Aby J. Mathew	In lieu of salary	11/17/2023(2)				—	—	—	826	10,548
Aby J. Mathew	In lieu of salary	12/1/2023(2)				—	—	—	796	10,547
Aby J. Mathew	In lieu of salary	12/15/2023(2)				—	—	—	705	10,540
Troy Wichterman	Cash incentive	-	45,312	283,200	339,840	—	—	—	—	—
Troy Wichterman	Market-based RSUs	1/3/2023				—	34,296	68,592	—	606,010
Troy Wichterman	Service-vesting RSUs	1/3/2023				—	—	—	34,296	606,010
Troy Wichterman	In lieu of salary	8/25/2023(2)				—	—	—	498	5,438
Troy Wichterman	In lieu of salary	9/8/2023(2)				—	—	—	408	5,439
Troy Wichterman	In lieu of salary	9/22/2023(2)				—	—	—	290	3,814
Troy Wichterman	In lieu of salary	10/6/2023(2)				—	—	—	281	3,805
Troy Wichterman	In lieu of salary	10/20/2023(2)				—	—	—	373	3,805
Troy Wichterman	In lieu of salary	11/3/2023(2)				—	—	—	333	3,803
Troy Wichterman	In lieu of salary	11/17/2023(2)				—	—	—	298	3,805
Troy Wichterman	In lieu of salary	12/1/2023(2)				—	—	—	287	3,803
Troy Wichterman	In lieu of salary	12/15/2023(2)				—	—	—	254	3,797
Geraint Phillips	Cash incentive	-	33,440	209,000	250,800	—	—	—	—	—
Geraint Phillips	Market-based RSUs	1/3/2023				—	21,223	42,446	—	534,607
Geraint Phillips	Service-vesting RSUs	1/3/2023				—	—	—	21,223	375,010
Geraint Phillips	In lieu of salary	8/25/2023(2)				—	—	—	401	4,379
Geraint Phillips	In lieu of salary	9/8/2023(2)				—	—	—	328	4,372
Geraint Phillips	In lieu of salary	9/22/2023(2)				—	—	—	221	2,906
Geraint Phillips	In lieu of salary	10/6/2023(2)				—	—	—	219	2,965
Geraint Phillips	In lieu of salary	10/20/2023(2)				—	—	—	291	2,968

Geraint Phillips	In lieu of salary	11/3/2023[2]				—	—	—	262	2,992
Geraint Phillips	In lieu of salary	11/17/2023[2]				—	—	—	234	2,988
Geraint Phillips	In lieu of salary	12/1/2023[2]				—	—	—	229	3,034
Geraint Phillips	In lieu of salary	12/15/2023[2]				—	—	—	211	3,154
Karen Foster	Cash incentive	-	27,504	171,900	206,280	—	—	—	—	—
Karen Foster	Market-based RSUs	1/3/2023				—	16,978	33,956	—	427,676
Karen Foster	Service-vesting RSUs	1/3/2023				—	—	—	16,978	300,001
Karen Foster	In lieu of salary	8/25/2023[2]				—	—	—	403	4,401
Karen Foster	In lieu of salary	9/8/2023[2]				—	—	—	330	4,399
Karen Foster	In lieu of salary	9/22/2023[2]				—	—	—	260	3,419
Karen Foster	In lieu of salary	10/6/2023[2]				—	—	—	252	3,412
Karen Foster	In lieu of salary	10/20/2023[2]				—	—	—	335	3,417
Karen Foster	In lieu of salary	11/3/2023[2]				—	—	—	299	3,415
Karen Foster	In lieu of salary	11/17/2023[2]				—	—	—	267	3,410
Karen Foster	In lieu of salary	12/1/2023[2]				—	—	—	258	3,419
Karen Foster	In lieu of salary	12/15/2023[2]				—	—	—	228	3,409

(1) The fair value of the market-based restricted stock awards is estimated at the date of grant using the Monte Carlo Simulation model.
(2) The grants awarded on dates indicated here were made in lieu of salary for each applicable pay period.

Discussion of summary compensation table and grants of plan-based awards table

The Company's executive compensation policies and practices, pursuant to which the compensation set forth in the Summary Compensation Table and the Grants of Plan-Based Awards Table was paid or awarded, are described above under "Compensation Discussion and Analysis." The material terms of employment agreements and arrangements with the Company's named executive officers are described below under the heading "Employment Arrangements." The material terms of the equity awards disclosed in the grants-of plan-based awards table are listed in the footnotes to the Summary Compensation Table, above.

Outstanding equity awards at December 31, 2023

The following table sets forth certain information regarding the outstanding stock option grants and stock awards held by the NEOs at December 31, 2023. Awards were made under both the 2013 Performance Incentive Plan and 2023 Omnibus Performance Incentive Plan. For the outstanding stock option grants and stock awards described below, vesting is conditioned on the NEO remaining in service to the Company through such vesting date. Such awards may also be subject to accelerated vesting as described in "Potential Payments Upon Termination or Change in Control."

	OPTION AWARDS				
Name (a)	**Number of Securities Underlying Unexercised Options (#) Exercisable (b)**	**Number of Securities Underlying Unexercised Options (#) Unexercisable (c)**	**Equity Incentive Plan Awards: Number of Securities Underlying Unexercised Unearned Options (#) (d)**	**Option Exercise Price ($) (e)**	**Option Expiration Date (f)**
Aby J. Mathew	50,000	—	—	2.06	5/4/2025[1]
Karen Foster	100,000	—	—	1.90	4/13/2026[1]

(1) This award is fully vested.

	UNVESTED SHARES				
Name (a)	Grant Date (b)	Number of shares or units of stock that have not vested (#) (c)	Market value of shares of units of stock that have not vested (1) ($) (d)	Equity incentive plan awards: Number of unearned shares, units or other rights that have not vested (#) (e)	Equity incentive plan awards: Market or payout value of unearned shares, units or other rights that have not vested ($) (f)
Roderick de Greef	1/4/2023	9,646 (2)	156,748	—	—
Roderick de Greef	10/19/2023	394,856 (3)	6,416,410	—	—
Michael Rice	2/24/2022	—	—	70,094 (4)	1,139,028
Michael Rice	1/3/2023	—	—	99,038 (5)	1,609,368
Aby J. Mathew	3/25/2020	1,779 (6)	28,909	—	—
Aby J. Mathew	2/8/2021	1,529 (7)	24,846	—	—
Aby J. Mathew	2/24/2022	11,829 (8)	192,221	21,029 (9)	341,721
Aby J. Mathew	1/3/2023	20,940 (10)	340,275	20,940 (11)	340,275
Troy Wichterman	6/19/2020	2,663 (12)	43,274	—	—
Troy Wichterman	8/9/2021	1,775 (13)	28,844	—	—
Troy Wichterman	2/24/2022	13,143 (14)	213,574	23,365 (15)	379,681
Troy Wichterman	1/3/2023	34,296 (16)	557,310	34,296 (17)	557,310
Geraint Phillips	8/9/2021	2,361 (18)	38,366	—	—
Geraint Phillips	2/24/2022	5,258 (19)	85,443	9,346 (20)	151,873
Geraint Phillips	1/3/2023	21,223 (21)	344,874	21,223 (22)	344,874
Karen Foster	3/25/2020	1,511 (23)	24,554	—	—
Karen Foster	2/8/2021	1,300 (24)	21,125	—	—
Karen Foster	2/24/2022	9,201 (25)	149,516	16,356 (26)	265,785
Karen Foster	1/3/2023	16,978 (27)	275,893	16,978 (28)	275,893

(1) The dollar amounts shown in columns (d) and (f) are determined by multiplying the number of shares or units shown in column (c) or (e), as applicable, by $16.25, the closing price of BioLife's common stock on December 31, 2023.

(2) 9,646 unvested service vesting-based RSAs subject to this award vested January 4, 2024. This award was provided to Mr. de Greef upon his appointment to the BOD on January 4, 2023.

(3) 394,856 service vesting-based RSAs subject to this award are scheduled to vest in 4 equal quarterly increments measured from the grant date, provided that Mr. de Greef continues to be employed with BioLife through the vesting dates.

(4) The target number of 70,094 market-based RSAs is shown. Between 0% and 200% of the target number of market-based RSAs vest based on our total shareholder return during ("TSR") compared to our 20 company peer group over the relevant two-year performance period between January 1, 2022 and December 31, 2023.

(5) The target number of 99,038 market-based RSAs is shown. Between 0% and 200% of the target number of market-based RSAs vest based on our total shareholder return during ("TSR") compared to our 20 company peer group over the relevant two-year performance period between January 1, 2023 and December 31, 2024.

(6) 1,779 unvested service vesting-based RSAs subject to this award will vest March 25, 2024.

(7) 1,529 unvested service vesting-based RSAs subject to this award are scheduled to vest in 4 equal quarterly increments measured from the grant date, provided that Mr. Mathew continues to be employed with BioLife through the vesting dates.
(8) 11,829 unvested service vesting-based RSAs subject to this award are scheduled to vest in 8 equal quarterly increments measured from the grant date, provided that Mr. Mathew continues to be employed with BioLife through the vesting dates.
(9) The target number of 21,029 market-based RSAs is shown. Between 0% and 200% of the target number of market-based RSAs vest based on our total shareholder return during ("TSR") compared to our 20 company peer group over the relevant two-year performance period between January 1, 2022 and December 31, 2023.
(10) 20,940 unvested service vesting-based RSAs subject to this award vested ¼ one year from the grant date, January 3, 2024 and, thereafter, will vest in 12 equal quarterly increments, provided that Mr. Mathew continues to be employed with BioLife through the vesting dates.
(11) The target number of 20,940 market-based RSAs is shown. Between 0% and 200% of the target number of market-based RSAs vest based on our total shareholder return during ("TSR") compared to our 20 company peer group over the relevant two-year performance period between January 1, 2023 and December 31, 2024.
(12) 2,663 unvested service vesting-based RSAs subject to this award are scheduled to vest in 2 equal quarterly increments measured from the grant date, provided that Mr. Wichterman continues to be employed with BioLife through the vesting dates.
(13) 1,755 unvested service vesting-based RSAs subject to this award are scheduled to vest in 4 equal quarterly increments measured from the grant date, provided that Mr. Wichterman continues to be employed with BioLife through the vesting dates.
(14) 13,143 unvested service vesting-based RSAs subject to this award are scheduled to vest in 8 equal quarterly increments measured from the grant date, provided that Mr. Wichterman continues to be employed with BioLife through the vesting dates.
(15) The target number of 23,365 market-based RSAs is shown. Between 0% and 200% of the target number of market-based RSAs vest based on our total shareholder return during ("TSR") compared to our 20 company peer group over the relevant two-year performance period between January 1, 2022 and December 31, 2023.
(16) 34,296 unvested service vesting-based RSAs subject to this award vested ¼ one year from the grant date, January 3, 2024 and, thereafter, will vest in 12 equal quarterly increments, provided that Mr. Wichterman continues to be employed with BioLife through the vesting dates.
(17) The target number of 34,296 market-based RSAs is shown. Between 0% and 200% of the target number of market-based RSAs vest based on our total shareholder return during ("TSR") compared to our 20 company peer group over the relevant two-year performance period between January 1, 2023 and December 31, 2024.
(18) 2,361 unvested service vesting-based RSAs subject to this award are scheduled to vest in 6 equal quarterly increments measured from the grant date, provided that Mr. Phillips continues to be employed with BioLife through the vesting dates.
(19) 5,258 unvested service vesting-based RSAs subject to this award are scheduled to vest in 8 equal quarterly increments measured from the grant date, provided that Mr. Phillips continues to be employed with BioLife through the vesting dates.
(20) The target number of 9,346 market-based RSAs is shown. Between 0% and 200% of the target number of market-based RSAs vest based on our total shareholder return during ("TSR") compared to our 20 company peer group over the relevant two-year performance period between January 1, 2022 and December 31, 2023.
(21) 21,223 unvested service vesting-based RSAs subject to this award vested ¼ one year from the grant date, January 3, 2024 and, thereafter, will vest in 12 equal quarterly increments, provided that Mr. Phillips continues to be employed with BioLife through the vesting dates.
(22) The target number of 21,223 market-based RSAs is shown. Between 0% and 200% of the target number of market-based RSAs vest based on our total shareholder return during ("TSR") compared to our 20 company peer group over the relevant two-year performance period between January 1, 2023 and December 31, 2024.
(23) 1,511 unvested service vesting-based RSAs subject to this award will vest March 25, 2024.
(24) 1,300 unvested service vesting-based RSAs subject to this award are scheduled to vest in 4 equal quarterly increments measured from the grant date, provided that Ms. Foster continues to be employed with BioLife through the vesting dates.
(25) 9,201 unvested service vesting-based RSAs subject to this award are scheduled to vest in 8 equal quarterly increments measured from the grant date, provided that Ms. Foster continues to be employed with BioLife through the vesting dates.
(26) The target number of 16,356 market-based RSAs is shown. Between 0% and 200% of the target number of market-based RSAs vest based on our total shareholder return during ("TSR") compared to our 20 company peer group over the relevant two-year performance period between January 1, 2022 and December 31, 2023.

(27) 16,978 unvested service vesting-based RSAs subject to this award vested ¼ one year from the grant date, January 3, 2024 and, thereafter, will vest in 12 equal quarterly increments, provided that Ms. Foster continues to be employed with BioLife through the vesting dates.

(28) The target number of 16,978 market-based RSAs is shown. Between 0% and 200% of the target number of market-based RSAs vest based on our total shareholder return during ("TSR") compared to our 20 company peer group over the relevant two-year performance period between January 1, 2023 and December 31, 2024.

Option exercises and stock vested for the fiscal year ended December 31, 2023

The following Option Exercises and Stock Vested table sets forth certain information regarding each exercise of stock options and each vesting of restricted stock during the last completed year for each of the named executive officers on an aggregated basis.

	Option Awards		Stock Awards	
Name (a)	**Number of Shares Acquired on Exercise (#) (b)**	**Value Realized on Exercise ($) (c)(1)**	**Number of Shares Acquired on Vesting (#) (d)**	**Value Realized on Vesting ($) (e)(2)**
Roderick de Greef[3]	—	—	28,467	520,816
Michael Rice	60,000	597,570	197,927	2,642,439
Aby J. Mathew	140,000	2,683,400	31,088	562,614
Troy Wichterman	938	17,466	20,111	364,238
Geraint Phillips	—	—	7,833	133,107
Karen Foster	—	—	21,754	413,440

(1) Value realized is calculated based on the difference between the closing price of our common stock on the date of exercise and the exercise price of the stock option.

(2) Value realized is calculated based on the closing price of our common stock on the date of vesting.

(3) Of the shares awarded to Mr. de Greef during the year ended December 31, 2023, 362 shares that vested were associated with his service period as a Director on the BOD from January 4, 2023 through October 18, 2023. The shares awarded are also outlined within the Director compensation section below.

Pension benefits

The Company has no defined benefit plans or other supplemental retirement plans for the NEOs.

Nonqualified deferred compensation

The Company has no nonqualified defined contribution plans or other nonqualified deferred compensation plans for the named executive officers.

Employment agreements

The terms and conditions of employment for each of our NEOs are set forth in written employment agreements, as amended from time to time ("employment agreements"). Each of the employment agreements with our NEOs sets forth the terms and conditions of such executive's employment with us and provides for severance and change in control payments and benefits, as described below.

Roderick de Greef

The Company entered into an employment agreement with Roderick de Greef, Chief Executive Officer and Chairman of the Board, effective December 1, 2020, as later amended, which has been superseded by an executive employment agreement dated October 19, 2023. Please see "Potential Payments Upon Termination or Upon Termination in Connection with a Change in Control" below for the severance benefits for which Mr. de Greef is eligible.

Michael Rice

On October 19, 2023, Michael Rice, former Chief Executive Officer and Chairman of the Board, resigned his positions as Chairman of the Board and Chief Executive Officer of the Company, effective immediately. In connection with Mr. Rice's resignation, the Company and Mr. Rice entered into a Separation, Release of Claims and Consulting Agreement on October 19, 2023, pursuant to which Mr. Rice will serve as a consultant for the Company beginning on the separation date and ending on the six-month anniversary thereof. During the consulting term, Mr. Rice will assist the Company's senior leadership team with certain projects as determined by mutual agreement between Mr. Rice and the Company's Chief Executive Officer.

Troy Wichterman

The Company entered into an employment agreement with Troy Wichterman, Chief Financial Officer, effective November 4, 2021, as amended effective June 1, 2023 and August 15, 2023. Please see "Potential Payments Upon Termination or Upon Termination in Connection with a Change in Control" below for the severance benefits for which Mr. Wichterman is eligible.

Aby J. Mathew

The Company entered into an employment agreement with Aby J. Mathew, Chief Scientific Officer and Executive Vice President, effective December 1, 2020, as amended effective January 1, 2023 and August 15, 2023. Please see "Potential Payments Upon Termination or Upon Termination in Connection with a Change in Control" below for the severance benefits for which Mr. Mathew is eligible.

Geraint Phillips

The Company entered into an employment agreement with Geraint Phillips, Senior Vice President, Global Operations, effective November 9, 2021, as amended effective January 1, 2023 and August 15, 2023. Please see "Potential Payments Upon Termination or Upon Termination in Connection with a Change in Control" below for the severance benefits for which Mr. Phillips is eligible.

Karen Foster

The Company entered into an employment agreement with Karen Foster, Chief Quality and Operations Officer, effective January 1, 2018, as amended effective June 1, 2023 and August 15, 2023. Please see "Potential Payments Upon Termination or Upon Termination in Connection with a Change in Control" below for the severance benefits for which Ms. Foster is eligible.

Potential payments upon termination or change in control

Executive Employment Agreements

Pursuant to each NEO's employment agreement, upon termination of the NEO's employment by the Company without "cause" or the NEO's resignation for "good reason" (each as defined in each NEO's employment agreements), the NEO will receive the following severance payments: (i) a lump sum severance payment equal to 12 months' base salary, (ii) an amount equal to the cost of 12 months of medical insurance premiums at a monthly amount equal to the amount of COBRA coverage in effect as of the termination date, plus a tax gross-up with respect to such premiums, and (iii) full vesting of all unvested equity awards.

If the NEO's employment is terminated by the Company or the NEO resigns for "good reason" (except in the case of Mr. de Greef) upon, or within 12 months following, a "change in control" (as defined in each NEO's employment agreement), the NEO will receive the following severance payments: (i) a lump sum severance payment equal to 12 months' (or, in the case of Mr. de Greef, 24 months') salary, (ii) 100% of any incentive cash and/or stock bonus opportunity for the year in which the Change in Control occurs, (iii) an amount equal to the cost of 12 months' (or, in the case of Mr. de Greef, 24 months') of medical insurance premiums at a monthly amount equal to the amount of COBRA coverage in effect as of the termination date, plus a tax gross-up with respect to such premiums, and (iii) full vesting of all unvested equity awards.

If the NEO's employment is terminated by the Company due to death or disability, the NEO will receive a prorated portion of any incentive bonus opportunity previously approved by the Board (assuming target level achievement) and full vesting of all unvested equity awards.

For purposes of each of the NEO employment agreements, "cause" generally means any of the following has occurred: (i) any breach of the employment agreement by the executive; (ii) any failure to perform assigned job responsibilities that continues unremedied for a period of 10 days after written notice to the executive officer by the Company; (iii) the executive officer's malfeasance or misconduct in connection with the executive officer's duties under the employment agreement or any act or omission of the executive officer which is materially injurious to the financial condition or business reputation of the Company or any of its subsidiaries or affiliates, (iv) commission or conviction of a felony or misdemeanor or failure to contest prosecution for a felony or misdemeanor; (v) the Company's reasonable belief that the executive officer engaged in a violation of any statute, rule or regulation, any of which in the judgment of the Company is harmful to the business or to Company's reputation; (vi) the Company's reasonable belief that the executive officer engaged in unethical practices, dishonesty or disloyalty; or (vii) any reason that would constitute "cause" under the laws the State of Washington.

For purposes of each of the NEO employment agreements, a "change in control" means (i) the consummation of a merger or consolidation of the Company with or into another entity, (ii) the dissolution, liquidation or winding up of the Company or (iii) the sale of all or substantially all of the Company's assets. The foregoing notwithstanding, a merger or consolidation of the Company shall not constitute a "Change in Control" if immediately after such merger or consolidation a majority of the voting power of the capital stock of the continuing or surviving entity, or any direct or indirect parent corporation of such continuing or surviving entity, will be owned by the persons who were the Company's stockholders immediately prior to such merger or consolidation in substantially the same proportions as their ownership of the voting power of the Company's capital stock immediately prior to such merger or consolidation.

For purposes of each of the NEO employment agreements, "good reason" generally means the following: (i) the Company's material breach of the terms of the employment agreement or any other written agreement between the executive officer and Company; (ii) significant diminution in the nature or scope of the executive's authority, title, function or duties, (iii) a material reduction of the executive officer's salary or target bonus opportunity, other than as a result of a general salary reduction affecting substantially all Company employees; (iv) any failure by the Company to obtain the assumption of the employment agreement by any successor or assign of the Company; or, except in the case of Mr. Phillips, (v) a requirement that the executive officer be based at any office or location more than 50 miles from the executive officer's primary work location prior to the effective date of the employment agreement.

Assuming the NEOs employment was terminated by the Company without cause or the NEOs resigned for good reason and such event took place on December 31, 2023, each of the continuing NEOs would have been entitled to the payments and benefits shown in the table below.

	Payments and Benefits			
Name	**Base Salary Continuation ($)**	**Accelerated Vesting of Equity Awards ($) (1)**	**Health Insurance Under COBRA ($)**	**Total ($)**
Roderick de Greef	744,450	6,416,410	30,668	7,191,528
Aby J Mathew	435,000	2,080,748	9,656	2,525,404
Troy Wichterman	472,000	1,779,993	14,275	2,266,268
Geraint Phillips	380,000	965,430	21,252	1,366,682
Karen Foster	382,000	2,637,765	21,252	3,041,017

(1) The dollar amounts shown are based on the intrinsic value of the stock options and restricted stock awards on December 31, 2023 calculated using $16.25, the closing price of BioLife's common stock on December 31, 2023.

Assuming the NEO's employment was terminated by the Company or the NEOs resigned for good reason upon or within 12 months following a change in control and such events took place on December 31, 2023, each of the continuing NEOs would have been entitled to the payments and benefits shown in the table below.

	Payments and Benefits				
Name	Base Salary Continuation ($)	2023 Annual Cash Incentive ($) (1)	Accelerated Vesting of Equity Awards ($) (2)	Health Insurance Under COBRA ($)	Total ($)
Roderick de Greef	1,116,675	—	6,416,410	61,336	7,594,421
Aby J Mathew	435,000	—	2,080,748	9,656	2,525,404
Troy Wichterman	472,000	—	1,779,993	19,033	2,271,026
Geraint Phillips	380,000	—	965,430	21,252	1,366,682
Karen Foster	382,000	—	2,637,765	21,252	3,041,017

(1) No bonus payout was provided for the year ended December 31, 2023.

(2) The dollar amounts shown are based on the intrinsic value of the stock options and restricted stock awards on December 31, 2023 calculated using $16.25, the closing price of BioLife's common stock on December 31, 2023.

Assuming the NEO's employment was terminated by the Company due to death or disability and such event took place on December 31, 2023, each of the continuing NEOs would have been entitled to the payments and benefits shown in the table below.

	Payments and Benefits			
Name	Base Salary Continuation ($)	Current year end Annual Cash Incentive ($) (1)	Accelerated Vesting of Equity Awards ($) (2)	Total ($)
Roderick de Greef	744,450	—	6,416,410	7,160,860
Aby J Mathew	435,000	—	2,080,748	2,515,748
Troy Wichterman	472,000	—	1,779,993	2,251,993
Geraint Phillips	380,000	—	965,430	1,345,430
Karen Foster	382,000	—	2,637,765	3,019,765

(1) No bonus payout was provided for the year ended December 31, 2023.

(2) The dollar amounts shown are based on the intrinsic value of the stock options and restricted stock awards on December 31, 2023 calculated using $16.25, the closing price of BioLife's common stock on December 31, 2023.

Equity Incentive Plans and Forms of Award Agreements

The 2023 Plan provides for full accelerated vesting of awards in the event a "change in control" (as defined in the 2023 Plan) occurs and the surviving entity or successor corporation in such change in control does not assume or substitute outstanding awards. The 2023 Plan further provides for "double-trigger" acceleration, meaning that in the event an award continues in effect or is assumed or substituted by the surviving entity or successor corporation in connection with a change in control, and an NEO's employment or service is terminated without "cause" (as defined in the 2023 Plan) upon or within 12 months following such change in control, all outstanding awards will accelerate and vest in full.

The award agreements under the 2013 Plan provide for "single-trigger" acceleration, meaning that in the event of a "change in control" (as defined in the 2013 Plan), all outstanding awards will accelerate and vest in full.

For purposes of the 2023 Plan, "cause" means, unless otherwise provided in an award agreement or employment or similar agreement entered into by and between the participant and the Company or any of its affiliates, termination of a participant's employment by the Company and its affiliates based on the employer's belief that any of the following has occurred: (a) the continued refusal or omission by the participant to perform any material duties required of such participant by the Company or any of its affiliates; (b) any act or omission by the participant involving malfeasance, misconduct, dishonesty or gross negligence in the performance of the participant's duties to, or material deviation from any of the policies or directives of, the Company or any of its affiliates; (c) the participant engaged in conduct that constitutes a breach of any statutory or common law duty of loyalty to the Company or any of its affiliates; (d) the participant engaged

in a violation of any statute, rule, regulation or policy of the Company or any of its affiliates, any of which in the judgment of the Company is harmful to the business or reputation of the Company or any of its affiliates; (e) the participant's commission or conviction of a felony or misdemeanor (other than a misdemeanor traffic violation) or any crime involving moral turpitude, including a plea of guilty or failure to contest prosecution for a felony, misdemeanor or crime involving moral turpitude; (f) any reason that would constitute Cause under the laws of the State of Washington; or (g) the participant's breach of an employment or similar agreement entered into by and between the participant and the Company or any of its affiliates, including, without limitation, a breach of any restrictive covenants contained therein.

For purposes of the 2013 Plan and the 2023 Plan, "change in control" generally means the occurrence of any of the following events: (a) the acquisition, directly or indirectly, in one transaction or a series of related transactions, by any person or group (within the meaning of Section 13(d)(3) of the Exchange Act) of the beneficial ownership of securities of the Company possessing more than 50% of the total combined voting power of all outstanding securities of the Company; (b) a merger or consolidation of the Company with any other entity, whether or not the Company is the surviving entity in such transaction; (c) the sale, transfer or other disposition (in one transaction or a series of related transactions) of all or substantially all of the consolidated assets of the Company; or (d) the approval by the stockholders of a plan or proposal for the liquidation or dissolution of the Company.

CEO pay ratio

Pursuant to a mandate of the Dodd-Frank Act, the SEC adopted a rule requiring that we annually disclose the ratio of our median employee's total annual compensation to the total annual compensation of our CEO, Roderick de Greef, who is also our principal executive officer (the "CEO Pay Ratio").

The Company's compensation and benefits philosophy and the overall structure of the compensation and benefit programs are broadly similar across the organization and aim to encourage and reward all employees who contribute to the Company's success. The Company strives to ensure the pay of every employee reflects the level of their job impact and responsibilities and is competitive within the Company's peer group. Compensation rates are benchmarked and are generally set to be market-competitive in the country in which the jobs are performed. The Company's ongoing commitment to pay equity is critical to successfully supporting a diverse workforce with opportunities for all employees to grow, develop, and contribute.

We identified the median employee using total salary and wages earned, then subtracting bonuses earned in 2022 but paid in 2023, adding bonuses earned in 2023 but not paid until 2024, adding the fair value of equity awards granted to the employee during 2023, and adding other compensation. Salary and wages were annualized for any employees hired during the most recent fiscal year. A total of 414 US based employees who were employed by the Company on December 31, 2023, the last day of the Company's fiscal year, were included in the determination of this calculation (including all employees, whether employed on a full-time, part-time, seasonal or temporary basis).

As illustrated in the table below, the Company's 2023 CEO Pay Ratio was approximately 72:1.

Roderick de Greef (CEO) 2023 Compensation	$	5,316,798
Median Employee 2023 Compensation	$	74,106
CEO Pay Ratio		72:1

To determine the median employee, we included all individuals employed as of December 31, 2023. Compensation for the median employee was determined in the same manner as the total compensation reported for Mr. de Greef in the "Total" column of the Summary Compensation Table. The pay ratio reported above is a reasonable estimate calculated in a manner consistent with SEC rules, based on the Company's internal records and the methodology described above. The SEC rules for identifying the median compensated employee allow companies to adopt a variety of methodologies, to apply certain exclusions and to make reasonable estimates and assumptions that reflect their employee populations and compensation practices. Accordingly, the pay ratio reported by other peer companies may not be comparable to the pay ratio reported above, as other companies have different employee populations and compensation practices and may use different methodologies, exclusions, estimates and assumptions in calculating their own pay ratios.

Director compensation

Each of our non-employee directors, during the year ended December 31, 2023, were compensated with an annual retainer fee of $60,000. Committee chairpersons were compensated with additional annual retainers as follows:

		Annual Retainer
Audit Committee Chair	$	13,750
Compensation Committee Chair	$	12,500
Governance and Nominating Committee Chair	$	10,000

A total of $465,657 in cash director compensation was recorded during the year ended December 31, 2023, which varied by director depending on when their services began or ended. The following table sets forth information regarding compensation earned by our non-employee directors for the year ended December 31, 2023.

Name (1)	Annual Cash Retainer ($) (2)	Board and Committee Chair Fees ($)	Total Cash Compensation ($)
Roderick de Greef[3]	112,740	—	112,740
Amy DuRoss[4]	76,667	12,500	89,167
Rachel Ellingson	60,000	-	60,000
Joydeep Goswami	60,000	10,000	70,000
Tim Moore	60,000	-	60,000
Joseph Schick	60,000	13,750	73,750

(1) Michael Rice did not receive compensation for his services as Board Chairman from January 1, 2023 through October 19, 2023.

(2) Due to the timing of member resignations and appointments, the annual cash retainers vary depending on the respective period of time each director served.

(3) Mr. de Greef joined the board as a Director on January 4, 2023 and served for approximately 10 months prior to being appointed Chief Executive Officer and Chairman on October 19, 2023. Upon appointment to the Chief Executive Officer position, the BOD awarded Mr. de Greef $62,740 for extraordinary services as a director in addition to his fees earned as a director through October 19, 2023. Mr. de Greef did not receive compensation for his services as Board Chairman for the remainder of they year ended December 31, 2023.

(4) Effective on August 1, 2023, Ms. DuRoss was appointed as lead independent director and received an increase in annual compensation of $40,000. This was prorated for the period of her service to $16,667 for the year ended December 31, 2023.

The Company’s compensation practices for non-employee directors, as determined by the Compensation Committee and our independent compensation consultant, FW Cook, includes annual awards of restricted shares of Common Stock. Equity compensation for non-employee directors was based on a fixed value of $180,000. These awards vest one year from the date of grant, provided such person is still a director on such vesting date.

Director compensation table for the fiscal year ended December 31, 2023

The following table sets forth a summary of the compensation the Company paid to its non-employee directors in the year ended December 31, 2023.

Name (1)	Fees Earned or Paid in Cash ($) (1)	Stock Awards ($) (2)	Total Compensation ($)
Roderick de Greef[3]	112,740	170,444	283,184
Amy DuRoss	89,170	180,000	269,170
Rachel Ellingson	60,000	180,000	240,000
Joydeep Goswami	70,000	180,000	250,000
Tim Moore	60,000	180,000	240,000
Joseph Schick	73,750	180,000	253,750

(1) For three months of the year ended December 31, 2023, the Directors agreed to be compensated in stock awards in lieu of their cash retainer fees. The totals below therefore represent cash paid to each Director. The remainder of their compensation is captured in the Stock Awards column.
(2) Represents the grant date fair value of awards granted in 2023 calculated in accordance with the ASC Topic 718. The assumptions the Company used for calculating the grant date fair values are set forth in Note 1: "*Organization and significant accounting policies – Stock-based compensation*."
(3) The BOD awarded Mr. de Greef an additional $62,740 for extraordinary services as a director prior to his appointment as Chief Executive Officer and Chairman on October 19, 2023.

The following table presents the aggregate number of unvested restricted stock units held by directors as of December 31, 2023:

Name	Number of Unvested Restricted Stock Units (#)
Roderick de Greef	9,646
Amy DuRoss	10,187
Rachel Ellingson	10,187
Joydeep Goswami	10,187
Tim Moore	10,187
Joseph Schick	10,187

The following table presents the grant date fair value of each restricted stock award in the fiscal year ended December 31, 2023 to non-employee directors, computed in accordance with the ASC Topic 718:

Name	Grant Date	Number of Securities Stock Awards (#)	Grant Date Fair Value of Stock Awards ($)
Roderick de Greef	1/3/2023	9,646	170,445
Roderick de Greef	10/1/2023[1]	362	4,999
Amy DuRoss	1/3/2023	10,187	180,004
Amy DuRoss	10/1/2023[1]	437	6,035
Amy DuRoss	11/1/2023[1]	598	6,040
Amy DuRoss	12/1/2023[1]	488	6,037
Rachel Ellingson	1/3/2023	10,187	180,004
Rachel Ellingson	10/1/2023[1]	362	4,999
Rachel Ellingson	11/1/2023[1]	495	5,000
Rachel Ellingson	12/1/2023[1]	404	4,997
Joydeep Goswami	1/3/2023	10,187	180,004
Joydeep Goswami	10/1/2023[1]	422	5,828
Joydeep Goswami	11/1/2023[1]	577	5,828
Joydeep Goswami	12/1/2023[1]	471	5,826
Tim Moore	1/3/2023	10,187	180,004
Tim Moore	10/1/2023[1]	362	4,999
Tim Moore	11/1/2023[1]	495	5,000
Tim Moore	12/1/2023[1]	404	4,997
Joseph Schick	1/3/2023	10,187	180,004
Joseph Schick	10/1/2023[1]	445	6,145
Joseph Schick	11/1/2023[1]	608	6,141
Joseph Schick	12/1/2023[1]	496	6,136

(1) The grants awarded on dates indicated here were made in lieu of director fees for each applicable distribution date.

Compensation Committee interlocks and insider participation

Ms. DuRoss, Mr. Schick, Ms. Ellingson, and Mr. Moore were the members of the Compensation Committee during the year ended December 31, 2023. No member of the Compensation Committee is a current or former employee of the Company or had any relationship with the Company requiring disclosure herein. No interlocking relationship exists between any member of the Board or the Compensation Committee and any member of the board or Compensation Committee of any other company and no such interlocking relationship has existed in the past.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT RELATED STOCKHOLDER MATTERS

The following table sets forth, as of February 22, 2024, certain information regarding the beneficial ownership of Common Stock by (i) each stockholder known by the Company to be the beneficial owner of more than 5% of the outstanding shares of the Company's common stock; (ii) each director of the Company; (iii) each named executive officer of the Company; and (iv) all of the Company's current directors and executive officers (including executive officers that are not named executive officers) as a group. This table is based upon information supplied by officers, directors, and principal stockholders and Schedule 13D(s) and Schedule 13G(s) filed with the SEC. There are 45.8 million outstanding shares inclusive of the number of shares of the Company's common stock that the person or group has the right to acquire within 60 days after February 22, 2024. Except as indicated by footnote, and subject to community property laws where applicable, we believe that the persons named in the table have sole voting and investment power with respect to all shares shown as beneficially owned by them. Unless otherwise indicated, the business address of each person listed is in care of 3303 Monte Villa Parkway, #310, Bothell, WA 98021.

Name and Address of Beneficial Owner	Common Stock	Percentage of Class
Directors and Executive Officers		
Michael Rice (Former Officer)(1)	417,179	*
Aby J. Mathew (Officer)(2)	320,108	*
Karen Foster (Officer)(3)	219,405	*
Roderick de Greef (Officer and Director)(4)	68,406	*
Troy Wichterman(Officer)(5)	50,174	*
Geraint Phillips (Officer)(6)	46,178	*
Joseph Schick (Director)	32,689	*
Rachel Ellingson (Director)	31,685	*
Joydeep Goswami (Director)	29,846	*
Amy DuRoss (Director)	29,379	*
Tim Moore (Director)	18,633	*
Total shares owned by Executive Officers and Directors (14 persons)	1,489,735	3.3 %
5% Stockholders		
Casdin Capital, LLC(7)	8,707,165	19.0 %
BlackRock, Inc.(8)	5,424,116	11.9 %
The Vanguard Group(9)	2,571,608	5.6 %
Goldman Sachs Group Inc(10)	2,476,242	5.4 %
Integrated Core Strategies (US) LLC(11)	2,404,862	5.3 %

*Less than 1%

(1) Includes 70,094 shares of common stock to be issued pursuant to restricted stock awards within 60 days from February 22, 2024.
(2) Includes options to purchase 50,000 shares of common stock issuable under stock options exercisable within 60 days from February 22, 2024 and 25,430 shares of common stock to be issued pursuant to restricted stock awards within 60 days from February 22, 2024.
(3) Includes options to purchase 100,000 shares of common stock issuable under stock options exercisable within 60 days from February 22, 2024 and 19,951 shares of common stock to be issued pursuant to restricted stock awards within 60 days from February 22, 2024.
(4) Includes 23,365 shares of common stock to be issued pursuant to restricted stock awards within 60 days from February 22, 2024.
(5) Includes 28,299 shares of Common Stock to be issued pursuant to restricted stock awards within 60 days from February 22, 2024.
(6) Includes 11,258 shares of Common Stock to be issued pursuant to restricted stock awards within 60 days from February 22, 2024.

(7) Based on a Schedule 13D/A filed on October 24, 2023 reporting shared voting and dispositive power over 8,707,165 shares of common stock. Casdin Capital, LLC ("Casdin") is the investment manager to Casdin Partners Master Fund, L.P. (the "Fund") and Casdin Partners GP, LLC (the "GP") is the general partner of the Fund. Eli Casdin is the managing member of Casdin and the GP. Pursuant to the Schedule 13D/A, Casdin, the GP and Eli Casdin may be deemed to be the beneficial owners of 8,707,165 shares of common stock, and the Fund may be deemed to be the beneficial owner of 8,557,165 shares of common stock. The business address of Casdin is 1350 Avenue of the Americas, Suite 2405, New York, New York 10019.

(8) Based on a Schedule 13G/A filed on January 23, 2024, reporting sole voting power over 5,379,424 shares of common stock and sole dispositive power over 5,424,116 shares of common stock. The business address of BlackRock, Inc. is 55 East 52nd Street, New York, New York 10055.

(9) Based on a Schedule 13G/A filed on February 13, 2024, reporting shared voting power over 61,469 shares of common stock, sole dispositive power over 2,475,884 shares of common stock and shared dispositive power over 95,724 shares of common stock. The business address of The Vanguard Group is 100 Vanguard Blvd., Malvern, Pennsylvania 19355.

(10) Based on a Schedule 13G filed on February 2, 2024, reporting shared voting power over 2,461,009 shares of common stock and shared dispositive power over 2,462,710 shares of common stock. The shares reported as beneficially owned by The Goldman Sachs Group, Inc. ("GS Group"), as a parent holding company, are owned, or may be deemed to be beneficially owned, by Goldman Sachs & Co. LLC ("Goldman Sachs"), a registered broker or dealer and a registered investment adviser. Goldman Sachs is a subsidiary of GS Group. The business address of GS Group is 200 West Street, New York, NY 10282.

(11) Based on a Schedule 13G/A filed on January 24, 2024, reporting shared voting and dispositive power over 2,404,862 shares of common stock. The shares reported as beneficially owned by Integrated Core Strategies (US) LLC may be deemed beneficially owned by Millennium Management LLC, Millennium Group Management LLC and Mr. Englander and are held by entities subject to voting control and investment discretion by Millennium Management LLC and/or other investment managers that may be controlled by Millennium Group Management LLC (the managing member of Millennium Management LLC) and Mr. Englander (the sole voting trustee of the managing member of Millennium Group Management LLC). The business address of Integrated Core Strategies (US) LLC is 399 Park Avenue, New York, New York 10022.

Equity Compensation Plan Information

The following table sets forth information as of December 31, 2023 relating to all our equity compensation plans:

Plan category	Number of securities to be issued upon exercise of outstanding options (in thousands)	Weighted Average exercise price of outstanding options	Number of granted restricted stock awards outstanding (in thousands)	Number of securities remaining available for future issuance (in thousands)
Second amended and restated 2013 performance incentive plan	217	$ 2.21	1,572	1,067
2023 Omnibus performance incentive plan	—	$ —	1,250	3,295

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

Certain relationships and related transactions

Since January 1, 2023, there has not been, nor has there been proposed, any transaction, arrangement or relationship or series of similar transactions, arrangements or relationships, including those involving indebtedness not in the ordinary course of business, to which we or our subsidiaries were or are a party, or in which we or our subsidiaries were or are a participant, in which the amount involved exceeded or exceeds the lesser of $120,000 or 1% of the average of our total assets at year-end for the last two completed fiscal years and in which any of our directors, nominees for director, executive officers, beneficial owners of more than 5% of any class of our voting securities, or any member of the immediate family of any of the foregoing persons, had or will have a direct or indirect material interest, other than as described above under

the headings "Executive Compensation" and "Board of Directors-Director Compensation" and other than the transactions described below. Each of the transactions described below was reviewed and approved or ratified by the Audit Committee of the Board. It is anticipated that any future transactions between us and our officers, directors, principal stockholders and affiliates will be on terms no less favorable to us than could be obtained from unaffiliated third-parties. In accordance with our Audit Committee's charter, all such transactions will be reviewed and approved by our Audit Committee and a majority of the independent and disinterested members of the Board.

Director independence

Our board of directors is responsible for determining the independence of our directors. For purposes of determining director independence, our board of directors has applied the definitions set forth in NASDAQ Rule 5605(a)(2) and the related rules of the SEC. Based upon its evaluation, our board of directors has affirmatively determined that the following directors meet the standards of independence: Mr. Schick, Ms. DuRoss, Ms. Ellingson, Mr. Goswami, and Mr. Moore.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

Independent Registered Public Accounting Firm Fees

The following table sets forth the aggregate fees billed by our current independent auditors, Grant Thornton LLP ("Grant Thornton"), for professional services rendered in the fiscal years ended December 31, 2023 and 2022.

	2023	2022
Audit fees[1]	$ 1,887,800	$ 1,257,800
Audit related fees[2]	18,550	—
Total	$ 1,906,350	$ 1,257,800

(1) Audit fees consist of professional services for the audit of our annual financial statements, review of financial statements included in our Form 10-Q or services that are normally provided by the accountant in connection with statutory and regulatory filings or engagement for those fiscal years.

(2) Audit-related fees consist of assurance and related services reasonably related to the performance of the audit or review of our financial statements that are not reported under the heading Audit fees above.

Audit Committee Pre-Approval Policies and Procedures

The Audit Committee must pre-approve all services to be performed for us by our independent auditors. Pre-approval is granted usually at regularly scheduled meetings of the Audit Committee. If unanticipated items arise between regularly scheduled meetings of the Audit Committee, the Audit Committee has delegated authority to the chairman of the Audit Committee to pre-approve services. The Audit Committee also may approve the additional unanticipated services by either convening a special meeting or acting by unanimous written consent. During the years ended December 31, 2023 and 2022, all services billed by Grant Thornton were pre-approved by the Audit Committee Chair in accordance with this policy.

PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

(a) The following documents are filed as part of this Annual Report on Form 10-K:

(1) Financial Statements (Included Under Item 8): The Index to the Financial Statements is included in this Annual Report on Form 10-K and is incorporated herein by reference.

(2) Financial Statement Schedules: Schedules to the Financial Statements have been omitted because the information required to be set forth therein is not applicable or is shown in the accompanying Financial Statements or notes thereto.

(b) Exhibits

Exhibit Number	Document
2.1†*	Agreement and Plan of Merger, dated as of March 19, 2021, by and among the Company, BLFS Merger Subsidiary, Inc., Global Cooling, Inc. and Albert Vierling and William Baumel, in their capacity as the representatives of the stockholders of Global Cooling, Inc. (included as Exhibit 2.1 to the current report on Form 8-K filed on March 25, 2021)
2.2†	Agreement and Plan of Merger, dated as of August 9, 2021, by and among the Company, BLFS Merger Sub, Inc., Sexton Biotechnologies, Inc. and Fortis Advisors LLC, in their capacity as the representatives of the stockholders of Sexton Biotechnologies, Inc. (incorporated by reference to Exhibit 2.6 to Company's report on Form 10-K filed March 31, 2022)
3.1	Amended and Restated Certificate of Incorporation of BioLife Solutions, Inc. (included as Exhibit 4.1 to the Registration Statement on Form S-8 filed on June 24, 2013)
3.2	Certificate of Amendment to the Amended and Restated Certificate of Incorporation of BioLife Solutions, Inc. (included as Exhibit 3.1 to the Current Report on Form 8-K filed on January 30, 2014)
3.3	Amended and Restated Bylaws of BioLife Solutions, Inc., effective April 25, 2013 (included as Exhibit A to the Registrant's Definitive Information Statement on Schedule 14C filed March 27, 2013)
3.4	Certificate of Designations, Preferences, and Rights of Series A Preferred Stock (included as Exhibit 3.1 to the current report on Form 8-K filed on July 6, 2017)
4.1	Description of the Company's Securities Registered under Section 12 of the Exchange Act (filed herewith)
10.1**	BioLife Solutions, Inc. 2023 Omnibus Incentive Plan (included as Exhibit 4.1 to the Registration Statement on Form S-8 for the fiscal year ended December 31, 2023 filed August 15, 2023)
10.2**	BioLife Solutions, Inc. Employee and Executive Form of Restricted Stock Unit Award Agreement pursuant to the 2023 Omnibus Incentive Plan (filed herewith)
10.3**	BioLife Solutions, Inc. Director Form of Restricted Stock Unit Award Agreement pursuant to the 2023 Omnibus Incentive Plan (filed herewith)
10.4**	Second Amended and Restated 2013 Performance Incentive Plan (included as Appendix A to the Registrant's Definitive Proxy Statement filed on April 14, 2017)
10.5**	Amendment No. 1 to Second Amended and Restated 2013 Performance Incentive Plan (included as Exhibit 10.2 to the Annual Report on Form 10-K for the fiscal y ear ended December 31, 2020 filed March 31, 2021)
10.6**	BioLife Solutions, Inc. Form of Non-Plan Stock Option Agreement (included as Exhibit 4.4 to the Registration Statement on Form S-8 filed on June 24, 2013)
10.7**	Form of Restricted Stock Purchase Agreement pursuant to the Second Amended & Restated 2013 Performance Incentive Plan (included as Exhibit 10.4 to the Quarterly Report on Form 10-Q for the quarter ended March 31, 2016 filed on May 16, 2016)
10.8**	Form of Stock Option Agreement pursuant to the Second Amended & Restated 2013 Performance Incentive Plan (included as Exhibit 10.5 to the Quarterly Report on Form 10-Q for the quarter ended March 31, 2016 filed on May 16, 2016)
10.9	Amendment No. 2 to BioLife Solutions, Inc. Second Amended and Restated 2013 Performance Incentive Plan (incorporated by reference to Exhibit 4.5 of the Registrant's Registration Statement on Form S-8 filed on July 7, 2021)
10.10	Amendment No. 3 to BioLife Solutions, Inc. Second Amended and Restated 2013 Performance Incentive Plan (incorporated by reference to Exhibit 4.6 of the Registrant's Registration Statement on Form S-8 filed on September 12, 2022)
10.11	Securities Purchase Agreement by and between BioLife Solutions, Inc. and the Purchaser (incorporated by reference to Exhibit 10.1 to the Company's report on Form 8-K filed October 19, 2023)
10.12	Registration Rights Agreement by and between BioLife Solutions, Inc. and the Purchaser (incorporated by reference to Exhibit 10.2 to the Company's report on Form 8-K filed October 19, 2023)
10.13	Lease Agreement dated July 1, 2023 for facility space 296 South Harper St. Nelsonville, OH 45764 (filed herewith)

10.14	Eleventh Amendment to the Lease, dated February 22, 2022, by and between the Company and ARE-SEATTLE No. 38, LLC (incorporated by reference to Exhibit 10.20 to Company's report on Form 10-K filed March 31, 2022)
10.15	Lease Agreement dated January 29, 2021 for facility space 301 Treble Cove Road, Billerica, MA 01862 (filed incorporated by reference to Exhibit 10.21 to Company's report on Form 10-K filed March 31, 2022)
10.16	Lease Agreement dated April 1, 2011 for facility space 6000 Poston Road, The Plains, OH 45710 (incorporated by reference to Exhibit 10.24 to Company's report on Form 10-K filed March 31, 2022)
10.17	Lease Extension Agreement dated May 30, 2018 for facility space 6000 Poston Road, The Plains, OH 45710 (incorporated by reference to Exhibit 10.25 to Company's report on Form 10-K filed March 31, 2022)
10.18	Lease Agreement dated October 1, 2019 for facility space 1102 Indiana Avenue, Indianapolis, IN 46202 (incorporated by reference to Exhibit 10.26 to Company's report on Form 10-K filed March 31, 2022)
10.19	First Amendment to the Lease, dated August 31, 2021 for facility space 1102 Indiana Avenue, Indianapolis, IN 46202 (incorporated by reference to Exhibit 10.27 to Company's report on Form 10-K filed March 31, 2022)
10.20	Loan and Security Agreement, dated September 20, 2022, between BioLife Solutions, Inc. and Silicon Valley Bank (incorporated by reference to Exhibit 10.1 to the Company's report on Form 10-Q filed November 9, 2022)
10.21	Waiver and First Amendment to Loan and Security Agreement, dated February 26, 2024, between BioLife Solutions, Inc. and First Citizens Bank and Trust Company (filed herewith)
10.22	Executive Employment Agreement, dated October 19, 2023, by and between the Company and Roderick de Greef (incorporated by reference to Exhibit 10.2 to the Company's report on Form 8-K filed October 23, 2023)
10.23	Separation, Release of Claims and Consulting Agreement, dated October 19, 2023, by and between the Company and Michael Rice (incorporated by reference to Exhibit 10.1 to the Company's report on Form 8-K filed October 23, 2023)
10.24	Amended Employment Agreement dated January 5, 2023 between the Company and Aby Mathew (filed herewith)
10.25	Amended Employment Agreement dated June 1, 2023 between the Company and Todd Berard (filed herewith)
10.26	Amended Employment Agreement dated June 1, 2023 between the Company and Karen Foster (filed herewith)
10.27	Amended Employment Agreement dated June 1, 2023 between the Company and Sarah Aebersold (filed herewith)
10.28	Amended Employment Agreement dated June 1, 2023 between the Company and Troy Wichterman (filed herewith)
10.29	Amended Employment Agreement dated June 1, 2023 between the Company and Geraint Phillips (filed herewith)
10.30	Amended Employment Agreement dated October 19, 2023 between the Company and Garrie Richardson (filed herewith)
10.31	Board of Directors Services Agreement entered into May 4, 2015 by and between the Company and Other Non-Employee Directors (included as Exhibit 10.3 to the Current Report on Form 8-K filed on May 5, 2015)
10.32	Form of Amendment to Employment Terms (incorporated by reference to Exhibit 10.1 to the Company's report on Form 8-K filed August 16, 2023)
16.1	Letter from BDO USA, LLP (incorporated by reference to Exhibit 16.1 to the Company's report on Form 8-K filed April 7, 2022)
21.1	List of the Company's Subsidiaries
23.1	Consent of Grant Thornton USA, LLP (filed herewith)
23.2	Consent of BDO USA, LLP (filed herewith)
31.1	Certification pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 (filed herewith)
31.2	Certification pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 (filed herewith)
32.1	Certification pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (filed herewith)
32.2	Certification pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (filed herewith)
97.1	BioLife Solutions, Inc. Incentive-based compensation recovery policy (filed herewith)

101.INS	Inline XBRL Instance Document (filed herewith)
101.SCH	Inline XBRL Taxonomy Extension Schema (filed herewith)
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase (filed herewith)
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase (filed herewith)
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase (filed herewith)
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase (filed herewith)
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101)

* Certain portions of this exhibit have been redacted pursuant to Item 601(b)(10) of Regulation S-K. A copy of the omitted portions will be furnished supplementally to the Securities and Exchange Commission upon request.

** Management contract or compensatory plan or arrangement.

† The exhibits and schedules to this Exhibit have been omitted in accordance with Regulation S-K Item 601(b)(2). The Registrant agrees to furnish supplementally a copy of all omitted exhibits and schedules to the Securities and Exchange Commission upon its request.

(c) Excluded financial statements:

None.

ITEM 16. FORM 10-K SUMMARY

The Company has elected not to include a summary pursuant to this Item 16.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

Date: February 29, 2024

BIOLIFE SOLUTIONS, INC.

/s/ RODERICK DE GREEF
Roderick de Greef
Chief Executive Officer (principal executive officer) and Chairman of the Board of Directors

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

Date: February 29, 2024

/s/ RODERICK DE GREEF
Roderick De Greef
Chief Executive Officer (principal executive officer) and Chairman of the Board of Directors

Date: February 29, 2024

/s/ TROY WICHTERMAN
Troy Wichterman
Chief Financial Officer (principal financial officer and principal accounting officer)

Date: February 29, 2024

/s/ JOSEPH SCHICK
Joseph Schick
Director

Date: February 29, 2024

/s/ AMY DUROSS
Amy DuRoss
Director

Date: February 29, 2024

/s/ RACHEL ELLINGSON
Rachel Ellingson
Director

Date: February 29, 2024

/s/ JOYDEEP GOSWAMI
Joydeep Goswami
Director

Date: February 29, 2024

/s/ TIM MOORE
Tim Moore
Director

DESCRIPTION OF BIOLIFE SOLUTIONS, INC.'S SECURITIES REGISTERED UNDER SECTION 12 OF THE SECURITIES EXCHANGE ACT OF 1934

BioLife Solutions, Inc. (the "Company") has one class of securities registered under Section 12 of the Securities Exchange Act of 1934, as amended, the Company's common stock, par value $0.001 per share ("Common Stock"). The following is a description of the material terms and provisions of the Common Stock, and also summarizes certain relevant provisions of the Delaware General Corporation Law (the "DGCL"). The following description does not purport to be complete and is subject to, and is qualified in its entirety by reference to, the applicable provisions of the DGCL as well as the Company's Amended and Restated Certificate of Incorporation, as amended (the "Certificate of Incorporation"), and the Company's Amended and Restated Bylaws (the "Bylaws"), copies of which are incorporated by reference as exhibits to the Annual Report on Form 10-K of which this exhibit is a part. The Company encourages you to read the Certificate of Incorporation, the Bylaws and the applicable provisions of the DGCL for additional information.

Authorized Capital Stock

Under the Certificate of Incorporation, the Company is authorized to issue up to 150,000,000 shares of Common Stock and 100,000,000 shares of preferred stock, par value $0.001 per share ("Preferred Stock"), of which, as of December 31, 2023, 4,250 shares of Preferred Stock were designated as "Series A Preferred Stock" ("Series A Preferred Stock"). As of December 31, 2023, 45,167,225 shares of Common Stock were outstanding and no shares of Preferred Stock were outstanding.

The outstanding shares of the Common Stock are fully paid and nonassessable.

Common Stock

Voting Rights

The holders of Common Stock are entitled to one vote per share on all matters submitted to a vote of the Company's stockholders. Holders of Common Stock are not entitled to cumulative voting rights in the election of directors.

The number of authorized shares of Common Stock may be increased or decreased (but not below the number of shares thereof then outstanding) by the affirmative vote of the holders of a majority of the voting power of the Company's outstanding capital stock entitled to vote, irrespective of the provisions of Section 242(b)(2) of the DGCL.

Dividends

The holders of Common Stock are entitled to receive dividends when and as determined by the Company's board of directors, out of assets legally available for dividends, subject to preferences that may be applicable to the holders of outstanding shares of Preferred Stock, and subject to applicable law.

As a Delaware corporation, the Company is subject to certain restrictions on dividends under the DGCL. Generally, a Delaware corporation may only pay dividends either out of "surplus" or out of the current or the immediately preceding year's net profits. Surplus is defined as the excess, if any, at any given time, of the total assets of a corporation over its total liabilities and statutory capital. The value of a corporation's assets can be measured in a number of ways and may not necessarily equal their book value.

Liquidation Rights

Upon the Company's liquidation, dissolution or winding up, after satisfaction of all its liabilities and the payment of any liquidation preference of any outstanding shares of Preferred Stock, the holders of shares of Common Stock will be entitled to share in all of the Company's assets legally remaining for distribution after payment of all debt and other liabilities, subject to preferences that may be applicable to the holders of outstanding shares of Preferred Stock.

Redemption Rights

There are no redemption or sinking fund provisions applicable to the Common Stock.

Preemptive Rights and Conversion Rights

There are no preemptive or other subscription or conversion rights applicable to the Common Stock.

Preferred Stock

The Company's board of directors is authorized, without further action by the Company's stockholders, to create and issue one or more series of Preferred Stock and to fix the rights, powers, preferences and privileges thereof. Among other rights, the Company's board of directors may determine, without further vote or action by the Company's stockholders:

- the number of shares constituting the series and the distinctive designation of the series;
- the dividend rate on the shares of the series, whether dividends will be cumulative, and if so, from which date or dates, and the relative rights of priority, if any, of payment of dividends on shares of the series;
- whether the series will have voting rights in addition to the voting rights provided by law and, if so, the terms of the voting rights;
- whether the series will have conversion privileges and, if so, the terms and conditions of conversion;
- whether or not the shares of the series will be redeemable or exchangeable, and, if so, the dates, terms and conditions of redemption or exchange, as the case may be;
- whether the series will have a sinking fund for the redemption or purchase of shares of that series, and, if so, the terms and amount of the sinking fund; and
- the rights of the shares of the series in the event of the Company's voluntary or involuntary liquidation, dissolution or winding up and the relative rights or priority, if any, of payment of shares of the series.

Any future issuance of shares of Preferred Stock, or the issuance of rights to purchase shares of Preferred Stock, could, among other things, decrease the amount of earnings and assets available for distribution to the holders of Common Stock or could adversely affect the rights and powers, including voting rights, of the holders of the Common Stock.

The following summarizes the rights of holders of the Series A Preferred Stock:

Voting Rights

The Series A Preferred Stock does not contain any voting rights other than as required by law. However, as long as there are any shares of Series A Preferred Stock outstanding, the Company will not, without the approval of a majority of the then outstanding shares of Series A Preferred Stock, (i) alter or amend the certificate of designations, preferences and rights of Series A Preferred Stock, (ii) authorize or create any class of equity securities ranking as to distribution of assets upon a liquidation senior to the Series A Preferred Stock, (iii) enter into, create, incur, assume or suffer to exist any indebtedness for borrowed money, except for purchase money indebtedness, that

by its terms is expressly senior in right of payment to the Company's obligations to the holders of Series A Preferred Stock, or (iv) enter into any agreement with respect to the foregoing.

Dividends

Holders of Series A Preferred Stock are entitled to receive cash dividends at a rate per share (as a percentage of the stated value per share) of 10% per annum. Dividends are payable quarterly in cash from legally available funds and accrue daily.

Liquidation Rights

Each share of Series A Preferred Stock will have a liquidation preference equal to the stated value plus any accrued but unpaid dividends thereon. In the event of the Company's liquidation, dissolution or winding up, the holders of Series A Preferred Stock shall be entitled to receive out of the Company's assets, before any payment is made to the holders of Common Stock and either in preference to or *pari passu* with the holders of any other series of Preferred Stock that may be issued in the future, a per share amount equal to the liquidation preference.

Redemption Rights

The Company has the right to redeem for cash outstanding Series A Preferred Stock along with accrued but unpaid dividends beginning immediately after issuance of shares of Series A Preferred Stock. Without the written consent of the holders of a majority of the Series A Preferred Stock outstanding, the Company may only redeem shares of Series A Preferred Stock in tranches of at least $50,000 in the aggregate based upon the stated value of such shares of Series A Preferred Stock. If there is more than one holder of Series A Preferred Stock and the Company desires to conduct a redemption, such redemption will be conducted on a pro rata basis among all of the holders of Series A Preferred Stock. The holders of Series A Preferred Stock will not have any right to require redemption.

Anti-Takeover Effects of Provisions of the Certificate of Incorporation, Bylaws, and Delaware Law

The following paragraphs regarding certain provisions of the DGCL, the Certificate of Incorporation, and the Bylaws are summaries of the material terms thereof and do not purport to be complete. You are urged to read the applicable provisions of the DGCL, the Certificate of Incorporation and the Bylaws.

Delaware Anti-Takeover Law

The Company is subject to Section 203 of the DGCL ("Section 203"). Section 203 generally prohibits a public Delaware corporation from engaging in a "business combination" with an "interested stockholder" for a period of three years following the time that such stockholder became an interested stockholder, unless:

- prior to such time the board of directors of the corporation approved either the business combination or the transaction which resulted in the stockholder becoming an interested stockholder;

- upon consummation of the transaction which resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for purposes of determining the voting stock outstanding (but not the outstanding voting stock owned by the interested stockholder) those shares owned (i) by persons who are directors and also officers and (ii) employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or

- at or subsequent to such time the business combination is approved by the board of directors and authorized at an annual or special meeting of stockholders, and not by written consent, by the affirmative vote of at least 66 2/3% of the outstanding voting stock which is not owned by the interested stockholder.

In general, Section 203 defines a business combination to include:

- any merger or consolidation involving the corporation and the interested stockholder;
- any sale, transfer, pledge or other disposition involving the interested stockholder of 10% or more of the assets of the corporation;
- subject to exceptions, any transaction that results in the issuance or transfer by the corporation of any stock of the corporation to the interested stockholder;
- subject to exceptions, any transaction involving the corporation that has the effect of increasing the proportionate share of the stock of any class or series of the corporation beneficially owned by the interested stockholder; or
- the receipt by the interested stockholder of the benefit of any loans, advances, guarantees, pledges or other financial benefits provided by or through the corporation.

In general, Section 203 defines an interested stockholder as any entity (other than the corporation and any direct or indirect majority-owned subsidiary of the corporation) or person beneficially owning 15% or more of the outstanding voting stock of the corporation and any entity or person affiliated with, associated with or controlling or controlled by such entity or person.

Certificate of Incorporation and Bylaws

The following provisions of the Certificate of Incorporation and Bylaws may make a change in control of the Company more difficult and could delay, defer or prevent a tender offer or other takeover attempt that a stockholder might consider to be in its best interest, including takeover attempts that might result in the payment of a premium to stockholders over the market price for their shares. These provisions also may promote the continuity of the Company's management by making it more difficult for a person to remove or change the incumbent members of the Company's board of directors.

Authorized but Unissued Shares; Undesignated Preferred Stock. The authorized but unissued shares of Common Stock will be available for future issuance without stockholder approval, subject to applicable law and the rules of the NASDAQ Stock Market LLC. These additional shares may be used for a variety of corporate purposes, including future public offerings to raise additional capital, acquisitions, and employee benefit plans. In addition, the Company's board of directors may authorize, without stockholder approval, the issuance of undesignated Preferred Stock with voting rights or other rights or preferences designated from time to time by the Company's board of directors (including the right to approve an acquisition or other change in the Company's control). The existence of authorized but unissued shares of Common Stock or Preferred Stock may enable the Company's board of directors to render more difficult or to discourage an attempt to obtain control of the Company by means of a merger, tender offer, proxy contest or otherwise.

Election and Removal of Directors. The exact number of the Company's directors will be fixed from time to time by a resolution adopted by a majority of directors and shall not be less than three members. The Company's board of directors currently consists of six members.

Director Vacancies. The Bylaws authorize the Company's board of directors to fill vacant directorships.

No Cumulative Voting. The Certificate of Incorporation provides that stockholders do not have the right to cumulate votes in the election of directors (therefore allowing the holders of a majority of the shares of Common Stock entitled to vote in any election of directors to elect all of the directors standing for election, if they should so choose).

Special Meetings of Stockholders. The Bylaws provide that special meetings of the Company's stockholders may be called at any time by the chairman of the board of directors, the president or the board of

directors, or by the president or secretary upon written request of the holders of thirty five percent (35%) of the outstanding shares entitled to vote thereat, or as otherwise required by law.

Advance Notice Procedures for Director Nominations. The Bylaws establish advance notice procedures for stockholders seeking to nominate candidates for election as directors at an annual or special meeting of stockholders, including certain requirements regarding the form and content of a stockholder's notice. Although the Bylaws do not give the board of directors the power to approve or disapprove stockholder nominations of candidates to be elected at a meeting, the Bylaws may have the effect of precluding the conduct of certain business at a meeting if the proper procedures are not followed or may discourage or deter a potential acquiror from conducting a solicitation of proxies to elect its own slate of directors or otherwise attempting to obtain control of the Company.

Amendments to Bylaws. The Bylaws may be amended by vote of a majority of the directors then in office or by vote of a majority of the Company's stock outstanding and entitled to vote. The Bylaws, whether adopted, amended or repealed by the stockholders or directors, may be amended or reinstated by the stockholders or the directors.

Nasdaq Stock Market Listing

The Common Stock is listed on the NASDAQ Stock Market LLC under the symbol "BLFS."

Transfer Agent and Registrar

The transfer agent and registrar for the Common Stock is Broadridge Financial Solutions, Inc. The transfer agent and registrar's address is 51 Mercedes Way, Edgewood, New York 11711.

BIOLIFE SOLUTIONS, INC.
2023 OMNIBUS PERFORMANCE INCENTIVE PLAN
RESTRICTED STOCK UNIT AWARD AGREEMENT

RESTRICTED STOCK UNIT AWARD GRANT NOTICE

BioLife Solutions, Inc., a corporation organized under the laws of the State of Delaware (the "Company"), pursuant to its 2023 Omnibus Performance Incentive Plan (the "Plan"), hereby grants to the individual whose name is set forth below (the "Grantee") the number of Restricted Stock Units set forth below (the "RSUs") as of the date set forth below (the "Grant Date"). The RSUs are subject to the terms and conditions set forth in this Restricted Stock Unit Award Grant Notice (this "Grant Notice"), the Terms and Conditions of the Restricted Stock Unit Award attached hereto as Exhibit A (together with this Grant Notice, the "Agreement"), and the Plan, each of which is incorporated herein by reference. Unless otherwise defined in the Agreement, capitalized terms used in the Agreement shall have the meanings ascribed to such terms in the Plan.

Name of Grantee:	_____
Number of RSUs:	_____
Grant Date:	_____
[Vesting Commencement Date][1]	_____

Vesting Schedule: Except as otherwise set forth in the Agreement or in any individual employment or similar agreement between the Grantee and the Company or any of its Subsidiaries or Affiliates (each, a "Company Group Member" and collectively, the "Company Group"), the RSUs will vest according to the following vesting schedule [include vesting schedule specified by the Committee at time of approval] (each such date, a "Vesting Date"); *provided* that the Grantee remains continuously in active service with a Company Group Member from the Grant Date through the applicable Vesting Date.

Change in Control: Unless specifically provided otherwise in any individual employment or similar agreement between the Grantee and the applicable Company Group Member, the provisions of Section 8 of the Plan shall apply in the event of a Change in Control. In addition, if the RSUs continue in effect or are assumed or substituted in connection with a Change in Control in accordance with the Plan, and the Grantee's employment or service is terminated without Cause [or for Good Reason (as defined below)][2], in either case, upon or within twelve (12) months following such Change in Control, any continued, assumed or substituted awards will become fully vested immediately prior to such termination.

[For purposes of the Agreement, Good Reason means, unless otherwise provided in any individual employment or similar agreement between the Grantee and the applicable Company Group Member, termination of a Grantee's employment by the Grantee for any of the following reasons, without such Grantee's consent:

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[1] To be included if the Vesting Commencement Date is different from the Grant Date.
[2] To be included for management team and otherwise if a Good Reason right is provided to the Grantee as determined by the Company on an individual basis.

(a) a material, adverse change in the Grantee's authority, duties or responsibilities (including the assignment of duties materially inconsistent with the Grantee's position);

(b) a material reduction in the Grantee's base salary (unless such reduction is part of a Company-wide program to reduce expenses); or

(c) the Company's decision to permanently relocate the Grantee's residence or primary work location by more than fifty (50) miles.

Notwithstanding the foregoing, unless provided otherwise in any individual employment or similar agreement between the Grantee and the applicable Company Group Member, a termination for Good Reason shall not have occurred unless and until (i) the Grantee provides the Company with written notice setting forth in detail the specific facts and circumstances allegedly giving rise to the event or condition that may constitute Good Reason within thirty (30) days following the initial occurrence thereof, (ii) the applicable Company Group Member does not cure the event or condition within sixty (60) days following receipt of such written notice, and (iii) the Grantee resigns the Grantee's employment within thirty (30) days following the expiration of such cure period.]

Acceptance:

The Grantee acknowledges receipt of a copy of the Plan, the Company's most recent prospectus that describes the Plan and the Agreement. The Grantee further acknowledges that the Grantee has reviewed the Agreement, including this Grant Notice, the Terms and Conditions of the Restricted Stock Unit Award and the Plan in their entirety, has had an opportunity to obtain the advice of counsel prior to executing the Agreement, and fully understands all provisions of the Agreement and the Plan.

By the Grantee's signature below or through any electronic acceptance procedure established by the Company, the Grantee agrees to be bound by the terms and conditions of the Plan and the Agreement, including this Grant Notice and the Terms and Conditions of the Restricted Stock Unit Award. The Grantee hereby agrees to accept as binding, conclusive and final all decisions or interpretations of the Committee upon any questions arising under the Plan or the Agreement. By the Grantee's signature below or through any acceptance procedure established by the Company, the Grantee agrees, to the fullest extent permitted by Applicable Law, that in lieu of receiving documents in paper format, the Grantee accepts the electronic delivery of any documents the Company, or any third party involved in administering the Plan, which the Company may designate in its sole discretion, may deliver in connection with this grant (including the Plan, the Agreement, account statements, prospectuses, prospectus supplements, annual and quarterly reports and all other communications and information) whether via the Company's intranet or the internet site of another such third party or via email, or such other means of electronic delivery specified by the Company.

Notwithstanding the foregoing, if the Grantee does not wish to receive this Award of RSUs, or does not consent and agree to the terms and conditions on which this Award is offered, as set forth in the Plan and the Agreement, **then the Grantee must reject this Award by notifying the Company at BioLife Solutions, Inc., Attention: Chief Financial Officer, 3303 Monte Vila Parkway, Suite 310, Bothell, Washington, 98021, no later than thirty (30) days following the date on which the Agreement is presented to the Grantee**, in which case this Award will be cancelled automatically and without any further action on the part of the Company or the Grantee immediately upon the expiration of such thirty (30)-day period, and without any additional consideration therefor. If within such thirty (30)-day period the Grantee neither affirmatively accepts nor affirmatively rejects this Award, the Grantee will be deemed to have accepted this Award pursuant to the terms and conditions set forth in the Plan and the

Agreement, including this Grant Notice and the Terms and Conditions of the Restricted Stock Unit Award.

BIOLIFE SOLUTIONS, INC.		**GRANTEE**	
By:	_____	By:	_____
Name:	Troy Wichterman	Name:	_____
Title:	Chief Financial Officer		

EXHIBIT A
TO RESTRICTED STOCK UNIT AWARD GRANT NOTICE
TERMS AND CONDITIONS OF RESTRICTED STOCK UNIT AWARD

Pursuant to the Grant Notice to which this Exhibit A is attached, and forms a part of, the Company has granted to the Grantee the number of RSUs set forth in the Grant Notice.

ARTICLE I.
GENERAL

Section 1 Incorporation of Terms of Plan. The RSUs and any Shares that may be issued to the Grantee hereunder are subject to the terms and conditions set forth in the Agreement and the Plan, which is incorporated herein by reference. In the event of any inconsistency between the Plan and the Agreement, the terms of the Plan shall control.

ARTICLE II.
AWARD OF RESTRICTED STOCK UNITS

Section 2.1 Award of RSUs. In consideration of the Grantee's past and/or continued employment with or service to the Company Group and for other good and valuable consideration, effective as of the Grant Date, the Company has granted to the Grantee the number of RSUs set forth in the Grant Notice, upon the terms and conditions set forth in the Agreement and the Plan, subject to adjustment as provided in Section 4(d) of the Plan. Each RSU represents the right to receive one Share at the times and subject to the conditions set forth herein. However, unless and until the RSUs have vested, the Grantee will have no right to the payment of any Shares subject thereto. Prior to the actual delivery of any Shares, the RSUs will represent an unsecured obligation of the Company, payable only from the general assets of the Company.

Section 2.2 Vesting of RSUs; Termination of Service.

(a) The RSUs shall vest in such amounts and at such times as are set forth in the Grant Notice.

(b) Unless specifically provided otherwise in the Agreement or any individual employment or similar agreement between the Grantee and the applicable Company Group Member, if the Grantee's employment or service with the Company Group terminates for any reason prior to the final Vesting Date, then all unvested RSUs shall be cancelled immediately upon such termination and the Grantee shall not be entitled to receive any consideration with respect thereto. Employment or service for only a portion of a vesting period prior to a Vesting Date, even if a substantial portion, will not entitle the Grantee to any proportionate vesting or avoid or mitigate a termination of rights and benefits upon or following a termination of employment or services except as specifically provided otherwise in the Agreement or in any individual employment or similar agreement between the Grantee and the applicable Company Group Member. A transfer of the Grantee's employment or service from one Company Group Member to another shall not be considered a termination of service. The Grantee's employment or service with the Company Group shall be deemed to terminate as of the date the Grantee is no longer actively providing services to the Company Group (regardless of the reason for the termination and whether or not later found to be invalid or in breach of Applicable Law or the terms of any individual employment or similar agreement between the Grantee and a Company Group Member and shall not, subject to Applicable Law, be extended by any required notice period (e.g., garden leave)).

(c) In the event that, prior to the final Vesting Date, the Grantee takes a leave of absence that was approved in writing by the Company or the applicable Company Group Member or to which the Grantee is entitled under Applicable Law (an "Authorized Leave"), any unvested RSUs will remain outstanding and continue to vest during the Authorized Leave in accordance with the terms of the Agreement. Notwithstanding the foregoing, in the event the Grantee does not return to active service (as determined by the Committee in its sole discretion) with the Company Group on or prior to the end of the Authorized Leave (or such earlier date as such leave no longer constitutes a "bona fide leave of absence" for purposes of Section 409A of the Code) (such date, the "Final Return Date"), then all unvested RSUs shall be cancelled immediately upon the Final Return Date and the Grantee shall not be entitled to receive any consideration with respect thereto.

Section 2.3 Settlement of RSUs.

(a) The RSUs shall be settled in Shares (either in book-entry form or otherwise) as soon as administratively practicable following the applicable Vesting Date, and, in any event, no later than March 15th of the calendar year following the year in which the RSUs are no longer subject to a substantial risk of forfeiture (for the avoidance of doubt, this deadline is intended to comply with the "short-term deferral" exemption from Section 409A of the Code). Notwithstanding the foregoing, the Company may delay the settlement of RSUs if it reasonably determines that such payment or distribution will violate Applicable Law, *provided* that such settlement shall be made at the earliest date at which the Company reasonably determines that the making of such distribution or payment will not cause such violation, as required by Treasury Regulation Section 1.409A-2(b)(7)(ii), and *provided further* that no settlement shall be delayed under this Section 2.3(a) if such delay will result in a violation of Section 409A of the Code.

(b) Settlement of vested RSUs shall be made by the Company in the form of whole Shares, and any fractional share shall be distributed in cash in an amount equal to the value of such fractional share determined based on the Fair Market Value as of the date immediately preceding the date of such settlement.

Section 2.4 Conditions to Issuance of Certificates. The Company shall not be required to issue or deliver any certificate or certificates for any Shares or to cause any Shares to be held in book-entry form prior to the fulfillment of all of the following conditions: (a) the admission of the Shares to listing on all stock exchanges on which such Shares are then listed, (b) the completion of any registration or other qualification of the Shares under any Applicable Law or under rulings or regulations of the SEC or other governmental regulatory body, which the Committee, in its absolute discretion, determines to be necessary or advisable, (c) the obtaining of any approval or other clearance from any state or federal governmental agency that the Committee, in its absolute discretion, determine to be necessary or advisable, (d) the receipt by the Company of full payment for such Shares, which may be in one or more of the forms of consideration approved by the Committee from time to time, including services rendered to the Company Group, that the Committee, in its absolute discretion, determines to be necessary or advisable, and (e) the receipt of full payment of any applicable withholding tax in accordance with Section 2.5 hereof by the Company Group Member with respect to which the applicable withholding obligation arises.

Section 2.5 Tax Withholding. Notwithstanding any other provision of the Agreement:

(a) Upon vesting and settlement of the Grantee's RSUs, the Company shall instruct any brokerage firm determined acceptable to the Company for such purpose to sell on the Grantee's behalf a whole number of Shares from those Shares that are subject to this Award as the Company determines to

be appropriate to generate cash proceeds sufficient to satisfy the applicable federal, state, local and foreign taxes (including the employee portion of any Federal Insurance Contributions Act obligation) required by Applicable Law to be withheld by the Company Group, and to remit the proceeds of such sale to the applicable Company Group Member with respect to which the withholding obligation arises. The Grantee's acceptance of this Award constitutes the Grantee's instruction and irrevocable authorization to the Company and such brokerage firm to complete the transactions described in this Section 2.5(a), including the transactions described in the previous sentence, as applicable. In the event of the occurrence of any broker-assisted sale of Shares in connection with the payment of withholding taxes as provided in this Section 2.5(a): (i) any Shares to be sold through a broker-assisted sale will be sold on the day the tax withholding obligation arises, or as soon thereafter as practicable, (ii) such Shares may be sold as part of a block trade with other grantees in the Plan in which all grantees receive an average price per Share, (iii) the Grantee will be responsible for all broker's fees and other costs of sale, and Grantee agrees to indemnify and hold the Company harmless from any losses, costs, damages, or expenses relating to any such sale, (iv) to the extent the proceeds of such sale exceed the required tax withholding obligation, the Company agrees to pay such excess in cash to the Grantee as soon as reasonably practicable, (v) the Grantee acknowledges that the Company or its designee is under no obligation to arrange for such sale at any particular price, and that the proceeds of any such sale may not be sufficient to satisfy the required tax withholding obligation, and (vi) in the event the proceeds of such sale are insufficient to satisfy the required tax withholding obligation, the Grantee agrees to pay immediately upon demand to the applicable Company Group Member with respect to which the withholding obligation arises, an amount in cash sufficient to satisfy any remaining portion of the applicable Company Group Member's required withholding obligation. If any such broker-assisted sale of Shares in connection with the payment of withholding taxes as provided in this Section 2.5(a) would violate Applicable Law, then the Company may require that such required tax withholding obligation be satisfied by other methods permissible under Section 9(f) of the Plan.

(b) The Grantee is ultimately liable and responsible for, and, to the extent permitted by Applicable Law, agrees to indemnify and keep indemnified the Company Group from, all taxes owed in connection with this Award, regardless of any action taken by any Company Group Member with respect to any tax withholding obligations that arise in connection with this Award. No Company Group Member makes any representation or undertaking regarding the treatment of any tax withholding in connection with the awarding or vesting of this Award or the subsequent sale of Shares. The Company Group does not commit and is under no obligation to structure this Award to reduce or eliminate the Grantee's tax liability.

Section 2.6 Rights as Stockholder. Neither the Grantee nor any Person claiming under or through the Grantee will have any of the rights or privileges of a stockholder of the Company in respect of any Shares deliverable hereunder unless and until certificates representing such Shares (which may be in book-entry form) will have been issued and recorded on the records of the Company or its transfer agents or registrars and delivered to the Grantee (including through electronic delivery to a brokerage account). Except as otherwise provided herein, after such issuance, recordation and delivery, the Grantee will have all the rights of a stockholder of the Company with respect to such Shares, including, without limitation, the right to vote such Shares and the right to receive dividends and distributions on such Shares.

ARTICLE III.
OTHER PROVISIONS

Section 3.1 Administration. The Committee shall have the power to interpret the Plan and the Agreement and to adopt such rules for the administration, interpretation and application of the Plan and the Agreement as are consistent therewith and to interpret, amend or revoke any such rules. All actions taken and all interpretations and determinations made by the Committee will be final and binding upon

the Grantee, the Company and all other interested Persons. To the extent allowable pursuant to Applicable Law, no member of the Committee or the Board will be personally liable for any action, determination or interpretation made with respect to the Plan or the Agreement.

Section 3.2 RSUs Not Transferable. The RSUs may not be sold, pledged, assigned or transferred in any manner other than by will or the laws of descent and distribution, unless and until the Shares underlying the RSUs have been issued, and all restrictions applicable to such Shares have lapsed. No RSUs or any interest or right therein or part thereof shall be liable for the debts, contracts or engagements of the Grantee or the Grantee's successors in interest or shall be subject to disposition by transfer, alienation, anticipation, pledge, encumbrance, assignment or any other means whether such disposition be voluntary or involuntary or by operation of law by judgment, levy, attachment, garnishment or any other legal or equitable proceedings (including bankruptcy), and any attempted disposition thereof shall be null and void and of no effect, except to the extent that such disposition is permitted by the preceding sentence.

Section 3.3 Adjustments. The Committee may accelerate the vesting of all or a portion of the RSUs in such circumstances as it, in its sole discretion, may determine. The Grantee acknowledges that the RSUs and the Shares subject to the RSUs are subject to adjustment, modification and termination in certain events as provided in the Agreement and the Plan, including Section 4(d) of the Plan.

Section 3.4 Clawback. The Grantee acknowledges that the RSUs and the Shares acquired upon settlement of the RSUs shall be subject (including on a retroactive basis) to clawback, recoupment, forfeiture or similar requirements (and such requirements shall be deemed incorporated by reference into the Agreement) to the extent required by the Clawback Policy or Applicable Law (including, without limitation, Section 304 of the Sarbanes-Oxley Act and Section 954 of the Dodd-Frank Wall Street Reform and Consumer Protection Act) or as a result of any failure to comply with the Company's policy on confidential information and proprietary business information, as may be in effect from time to time.

Section 3.5 No Advice Regarding Grant. The Company is not providing any tax, legal or financial advice, nor is the Company making any recommendations regarding the Grantee's participation in the Plan, or the Grantee's acquisition or sale of the Shares underlying the RSUs. The Grantee should consult with the Grantee's personal tax, legal and financial advisors regarding participation in the Plan before taking any action related to the Plan.

Section 3.6 Insider Trading/Market Abuse Laws. The Grantee acknowledges that the Grantee may be subject to insider trading restrictions and/or market abuse laws in the United States, which may affect the Grantee's ability to acquire or sell Shares or rights to Shares (e.g., RSUs) under the Plan during such time as the Grantee is considered to have "inside information" regarding the Company (as defined under Applicable Law). Local insider trading laws and regulations may prohibit the cancellation or amendment of orders the Grantee placed before the Grantee possessed inside information. Furthermore, the Grantee could be prohibited from (i) disclosing the inside information to any third party and (ii) "tipping" third parties or causing them otherwise to buy or sell securities. The Grantee should keep in mind third parties include fellow employees. Any restrictions under these laws or regulations are separate from and in addition to any restrictions that may be imposed under any applicable insider trading policy of the Company. The Grantee is responsible for ensuring compliance with any applicable restrictions and should consult with the Grantee's personal legal advisor on this matter.

Section 3.7 Notices. Any notice to be given under the terms of the Agreement to the Company shall be addressed to the Company in care of the Chief Financial Officer at the Company's principal office, and any notice to be given to the Grantee shall be addressed to the Grantee at the Grantee's last address reflected on the Company's records. By a notice given pursuant to this Section 3.7, either party

may hereafter designate a different address for notices to be given to that party. Any notice shall be deemed duly given when sent via email or when sent by certified mail (return receipt requested) and deposited (with postage prepaid) in a post office or branch post office regularly maintained by the United States Postal Service or similar foreign entity.

Section 3.8 Headings. Headings are provided herein for convenience only and are not to serve as a basis for interpretation or construction of the Agreement.

Section 3.9 Governing Law. The laws of the State of Washington shall govern the interpretation, validity, administration, enforcement and performance of the terms of the Agreement, except for matters of corporate law, in which case the provisions of the Delaware General Corporation Law shall govern, and in each case, regardless of the law that might be applied under principles of conflicts of laws.

Section 3.10 Conformity to Securities Laws. The Grantee acknowledges that the Plan and the Agreement are intended to conform to the extent necessary with all Applicable Laws, including, without limitation, the provisions of the Securities Act of 1933, as amended from time to time, or any successor statute thereto, and the Exchange Act, and any and all regulations and rules promulgated thereunder by the SEC, and state securities laws and regulations. Notwithstanding any other provision of the Plan or the Agreement, the Plan shall be administered, and the RSUs are granted, only in such a manner as to conform to Applicable Law and shall be deemed amended to the extent necessary to conform to Applicable Law.

Section 3.11 Amendment, Suspension and Termination. To the extent permitted by the Plan, the Agreement may be wholly or partially amended or otherwise modified, suspended or terminated at any time or from time to time by the Committee or the Board, *provided* that, except as may otherwise be provided by the Plan, no amendment, modification, suspension or termination of the Agreement shall materially and adversely impair the rights of the Grantee without the prior written consent of the Grantee.

Section 3.12 Imposition of Other Requirement. The Company reserves the right to impose other requirements on the Grantee's participation in the Plan, on the RSUs and on any Shares acquired under the Plan, to the extent the Company determines it is necessary or advisable for legal or administrative reasons, and to require the Grantee to sign any additional agreements or undertakings that may be necessary to accomplish the foregoing.

Section 3.13 No Waiver. Any right of the Company Group contained in the Agreement may be waived in writing by the Committee. No waiver of any right hereunder by any party shall operate as a waiver of any other right, or as a waiver of the same right with respect to any subsequent occasion for its exercise, or as a waiver of any right to damages. No waiver by any party of any breach of the Agreement shall be held to constitute a waiver of any other breach or a waiver of the continuation of the same breach.

Section 3.14 Successors and Assigns. The Company may assign any of its rights under the Agreement to single or multiple assignees, and the Agreement shall inure to the benefit of the successors and assigns of the Company. Subject to the restrictions on transfer set forth in Section 3.2 hereof and the Plan, the Agreement shall be binding upon and inure to the benefit of the heirs, legatees, legal representatives, successors and assigns of the parties hereto.

Section 3.15 Limitations Applicable to Section 16 Persons. Notwithstanding any other provision of the Plan or the Agreement, if the Grantee is subject to Section 16 of the Exchange Act, the Plan, the RSUs and the Agreement shall be subject to any additional limitations set forth in any applicable exemptive rule under Section 16 of the Exchange Act (including any amendment to Rule 16b-3 of the Exchange Act) that are requirements for the application of such exemptive rule. To the extent permitted

by Applicable Law, the Agreement shall be deemed amended to the extent necessary to conform to such applicable exemptive rule.

Section 3.16 Not a Contract of Employment. Nothing in the Agreement or the Plan shall confer upon the Grantee any right to continue to serve as an employee or other service provider of any Company Group Member or shall interfere with or restrict in any way the rights of any Company Group Member, which rights are hereby expressly reserved, to discharge or terminate the services of the Grantee at any time for any reason whatsoever, with or without cause, except to the extent (a) expressly provided otherwise in a written agreement between a Company Group Member and the Grantee or (b) where such provisions are not consistent with Applicable Law, in which case such Applicable Law.

Section 3.17 Entire Agreement. The Plan and the Agreement (including any exhibit hereto) constitute the entire agreement of the parties and supersede in their entirety all prior undertakings and agreements of the Company and the Grantee with respect to the subject matter hereof. The Grantee expressly warrants that the Grantee is not accepting the Agreement in reliance on any promises, representations, or inducements other than those contained herein.

Section 3.18 Section 409A. This Award is not intended to constitute "nonqualified deferred compensation" within the meaning of Section 409A of the Code. However, notwithstanding any other provision of the Plan or the Agreement, if at any time the Committee determines that this Award (or any portion thereof) may be subject to Section 409A of the Code, the Committee shall have the right in its sole discretion (without any obligation to do so or to indemnify the Grantee or any other Person for failure to do so) to adopt such amendments to the Plan or the Agreement, or adopt other policies and procedures (including amendments, policies and procedures with retroactive effect), or take any other actions, as the Committee determines are necessary or appropriate for this Award either to be exempt from the application of Section 409A of the Code or to comply with the requirements of Section 409A of the Code. Any ambiguities herein will be interpreted such that all payments and benefits to U.S. taxpayers will be exempt from, or comply with, the requirements of Section 409A of the Code so that none of the RSUs provided under the Agreement will be subject to the additional tax imposed under Section 409A of the Code. Each payment payable under the Agreement is intended to constitute a separate payment for purposes of Treasury Regulation 1.409A-2(b)(2).

Section 3.19 Agreement Severable. In the event that any provision of the Agreement is held invalid or unenforceable, such provision will be severable from, and such invalidity or unenforceability will not be construed to have any effect on, the remaining provisions of the Agreement.

Section 3.20 Limitation on the Grantee's Rights. Participation in the Plan confers no rights or interests upon the Grantee other than as herein provided. The Agreement creates only a contractual obligation on the part of the Company as to amounts payable and shall not be construed as creating a trust. Neither the Plan nor any underlying program, in and of itself, has any assets. The Grantee shall have only the rights of a general unsecured creditor of the Company with respect to amounts credited and benefits payable, if any, with respect to the RSUs.

Section 3.21 Counterparts. The Grant Notice may be executed in one or more counterparts, including by way of any electronic signature, subject to Applicable Law, each of which shall be deemed an original and all of which together shall constitute one instrument.

* * * * *

BIOLIFE SOLUTIONS, INC.
2023 OMNIBUS PERFORMANCE INCENTIVE PLAN
RESTRICTED STOCK UNIT AWARD AGREEMENT

RESTRICTED STOCK UNIT AWARD GRANT NOTICE
(FOR NON-EMPLOYEE DIRECTORS)

BioLife Solutions, Inc., a corporation organized under the laws of the State of Delaware (the "Company"), pursuant to its 2023 Omnibus Performance Incentive Plan (the "Plan"), hereby grants to the individual whose name is set forth below (the "Grantee") the number of Restricted Stock Units set forth below (the "RSUs") as of the date set forth below (the "Grant Date"). The RSUs are subject to the terms and conditions set forth in this Restricted Stock Unit Award Grant Notice (this "Grant Notice"), the Terms and Conditions of the Restricted Stock Unit Award attached hereto as Exhibit A (together with this Grant Notice, the "Agreement"), and the Plan, each of which is incorporated herein by reference. Unless otherwise defined in the Agreement, capitalized terms used in the Agreement shall have the meanings ascribed to such terms in the Plan. For the avoidance of doubt, any references in the Agreement to any employer, an employment relationship or an employment agreement do not apply to the Grantee and shall be interpreted accordingly.

Name of Grantee:	_____
Number of RSUs:	_____
Grant Date:	_____
Vesting Commencement Date	_____

Vesting Schedule: Except as otherwise set forth in the Agreement or in any individual service agreement between the Grantee and the Company or any of its Subsidiaries or Affiliates (each, a "Company Group Member" and collectively, the "Company Group"), the RSUs will vest [on the earlier of the one (1)-year anniversary of the Vesting Commencement Date and the day prior to the date of the regular annual meeting of the Company's stockholders following the Vesting Commencement Date (such earlier date, the "Vesting Date"); *provided* that the Grantee remains continuously in active service with a Company Group Member from the Grant Date through the Vesting Date][1] [immediately on the Grant Date (the "Vesting Date")][2].

Change in Control: Unless specifically provided otherwise in any individual service agreement between the Grantee and the applicable Company Group Member, in the event of a Change in Control, any unvested RSUs granted hereunder that are held by the Grantee immediately prior to such Change in Control will become fully vested immediately upon such Change in Control.

Tax: The Grantee will be required to recognize taxable compensation income upon vesting and settlement of the Grantee's RSUs in an amount equal to the value of the Shares that are subject to this Award at such time. The Grantee acknowledges that Section 2.5(a) of the Agreement shall not apply to this Award, and

[1] To be included for annual director grants.
[2] To be included for grants in lieu of cash retainers, if any.

the Company shall report the taxable compensation arising in connection with the vesting and settlement of the Grantee's RSUs on Form 1099-MISC issued to the Grantee in accordance with Applicable Law.

Acceptance:

The Grantee acknowledges receipt of a copy of the Plan, the Company's most recent prospectus that describes the Plan and the Agreement. The Grantee further acknowledges that the Grantee has reviewed the Agreement, including this Grant Notice, the Terms and Conditions of the Restricted Stock Unit Award and the Plan in their entirety, has had an opportunity to obtain the advice of counsel prior to executing the Agreement, and fully understands all provisions of the Agreement and the Plan.

By the Grantee's signature below or through any electronic acceptance procedure established by the Company, the Grantee agrees to be bound by the terms and conditions of the Plan and the Agreement, including this Grant Notice and the Terms and Conditions of the Restricted Stock Unit Award. The Grantee hereby agrees to accept as binding, conclusive and final all decisions or interpretations of the Committee upon any questions arising under the Plan or the Agreement. By the Grantee's signature below or through any acceptance procedure established by the Company, the Grantee agrees, to the fullest extent permitted by Applicable Law, that in lieu of receiving documents in paper format, the Grantee accepts the electronic delivery of any documents the Company, or any third party involved in administering the Plan, which the Company may designate in its sole discretion, may deliver in connection with this grant (including the Plan, the Agreement, account statements, prospectuses, prospectus supplements, annual and quarterly reports and all other communications and information) whether via the Company's intranet or the internet site of another such third party or via email, or such other means of electronic delivery specified by the Company.

Notwithstanding the foregoing, if the Grantee does not wish to receive this Award of RSUs, or does not consent and agree to the terms and conditions on which this Award is offered, as set forth in the Plan and the Agreement, **then the Grantee must reject this Award by notifying the Company at BioLife Solutions, Inc., Attention: Chief Financial Officer, 3303 Monte Vila Parkway, Suite 310, Bothell, Washington, 98021, no later than thirty (30) days following the date on which the Agreement is presented to the Grantee**, in which case this Award will be cancelled automatically and without any further action on the part of the Company or the Grantee immediately upon the expiration of such thirty (30)-day period, and without any additional consideration therefor. If within such thirty (30)-day period the Grantee neither affirmatively accepts nor affirmatively rejects this Award, the Grantee will be deemed to have accepted this Award pursuant to the terms and conditions set forth in the Plan and the Agreement, including this Grant Notice and the Terms and Conditions of the Restricted Stock Unit Award.

BIOLIFE SOLUTIONS, INC.		**GRANTEE**	
By:	_____	By:	_____
Name:	Troy Wichterman	Name:	_____
Title:	Chief Financial Officer		

EXHIBIT A
TO RESTRICTED STOCK UNIT AWARD GRANT NOTICE
TERMS AND CONDITIONS OF RESTRICTED STOCK UNIT AWARD

Pursuant to the Grant Notice to which this Exhibit A is attached, and forms a part of, the Company has granted to the Grantee the number of RSUs set forth in the Grant Notice.

ARTICLE I.
GENERAL

Section 1 Incorporation of Terms of Plan. The RSUs and any Shares that may be issued to the Grantee hereunder are subject to the terms and conditions set forth in the Agreement and the Plan, which is incorporated herein by reference. In the event of any inconsistency between the Plan and the Agreement, the terms of the Plan shall control.

ARTICLE II.
AWARD OF RESTRICTED STOCK UNITS

Section 2.1 Award of RSUs. In consideration of the Grantee's past and/or continued employment with or service to the Company Group and for other good and valuable consideration, effective as of the Grant Date, the Company has granted to the Grantee the number of RSUs set forth in the Grant Notice, upon the terms and conditions set forth in the Agreement and the Plan, subject to adjustment as provided in Section 4(d) of the Plan. Each RSU represents the right to receive one Share at the times and subject to the conditions set forth herein. However, unless and until the RSUs have vested, the Grantee will have no right to the payment of any Shares subject thereto. Prior to the actual delivery of any Shares, the RSUs will represent an unsecured obligation of the Company, payable only from the general assets of the Company.

Section 2.2 Vesting of RSUs; Termination of Service.

(a) The RSUs shall vest in such amounts and at such times as are set forth in the Grant Notice.

(b) Unless specifically provided otherwise in the Agreement or any individual employment or similar agreement between the Grantee and the applicable Company Group Member, if the Grantee's employment or service with the Company Group terminates for any reason prior to the final Vesting Date, then all unvested RSUs shall be cancelled immediately upon such termination and the Grantee shall not be entitled to receive any consideration with respect thereto. Employment or service for only a portion of a vesting period prior to a Vesting Date, even if a substantial portion, will not entitle the Grantee to any proportionate vesting or avoid or mitigate a termination of rights and benefits upon or following a termination of employment or services except as specifically provided otherwise in the Agreement or in any individual employment or similar agreement between the Grantee and the applicable Company Group Member. A transfer of the Grantee's employment or service from one Company Group Member to another shall not be considered a termination of service. The Grantee's employment or service with the Company Group shall be deemed to terminate as of the date the Grantee is no longer actively providing services to the Company Group (regardless of the reason for the termination and whether or not later found to be invalid or in breach of Applicable Law or the terms of any individual employment or similar agreement between the Grantee and a Company Group Member and shall not, subject to Applicable Law, be extended by any required notice period (e.g., garden leave)).

(c) In the event that, prior to the final Vesting Date, the Grantee takes a leave of absence that was approved in writing by the Company or the applicable Company Group Member or to which the Grantee is entitled under Applicable Law (an "Authorized Leave"), any unvested RSUs will remain outstanding and continue to vest during the Authorized Leave in accordance with the terms of the Agreement. Notwithstanding the foregoing, in the event the Grantee does not return to active service (as determined by the Committee in its sole discretion) with the Company Group on or prior to the end of the Authorized Leave (or such earlier date as such leave no longer constitutes a "bona fide leave of absence" for purposes of Section 409A of the Code) (such date, the "Final Return Date"), then all unvested RSUs shall be cancelled immediately upon the Final Return Date and the Grantee shall not be entitled to receive any consideration with respect thereto.

Section 2.3 Settlement of RSUs.

(a) The RSUs shall be settled in Shares (either in book-entry form or otherwise) as soon as administratively practicable following the applicable Vesting Date, and, in any event, no later than March 15th of the calendar year following the year in which the RSUs are no longer subject to a substantial risk of forfeiture (for the avoidance of doubt, this deadline is intended to comply with the "short-term deferral" exemption from Section 409A of the Code). Notwithstanding the foregoing, the Company may delay the settlement of RSUs if it reasonably determines that such payment or distribution will violate Applicable Law, *provided* that such settlement shall be made at the earliest date at which the Company reasonably determines that the making of such distribution or payment will not cause such violation, as required by Treasury Regulation Section 1.409A-2(b)(7)(ii), and *provided further* that no settlement shall be delayed under this Section 2.3(a) if such delay will result in a violation of Section 409A of the Code.

(b) Settlement of vested RSUs shall be made by the Company in the form of whole Shares, and any fractional share shall be distributed in cash in an amount equal to the value of such fractional share determined based on the Fair Market Value as of the date immediately preceding the date of such settlement.

Section 2.4 Conditions to Issuance of Certificates. The Company shall not be required to issue or deliver any certificate or certificates for any Shares or to cause any Shares to be held in book-entry form prior to the fulfillment of all of the following conditions: (a) the admission of the Shares to listing on all stock exchanges on which such Shares are then listed, (b) the completion of any registration or other qualification of the Shares under any Applicable Law or under rulings or regulations of the SEC or other governmental regulatory body, which the Committee, in its absolute discretion, determines to be necessary or advisable, (c) the obtaining of any approval or other clearance from any state or federal governmental agency that the Committee, in its absolute discretion, determine to be necessary or advisable, (d) the receipt by the Company of full payment for such Shares, which may be in one or more of the forms of consideration approved by the Committee from time to time, including services rendered to the Company Group, that the Committee, in its absolute discretion, determines to be necessary or advisable, and (e) the receipt of full payment of any applicable withholding tax in accordance with Section 2.5 hereof by the Company Group Member with respect to which the applicable withholding obligation arises.

Section 2.5 Tax Withholding. Notwithstanding any other provision of the Agreement:

(a) Upon vesting and settlement of the Grantee's RSUs, the Company shall instruct any brokerage firm determined acceptable to the Company for such purpose to sell on the Grantee's behalf a whole number of Shares from those Shares that are subject to this Award as the Company determines to

be appropriate to generate cash proceeds sufficient to satisfy the applicable federal, state, local and foreign taxes (including the employee portion of any Federal Insurance Contributions Act obligation) required by Applicable Law to be withheld by the Company Group, and to remit the proceeds of such sale to the applicable Company Group Member with respect to which the withholding obligation arises. The Grantee's acceptance of this Award constitutes the Grantee's instruction and irrevocable authorization to the Company and such brokerage firm to complete the transactions described in this Section 2.5(a), including the transactions described in the previous sentence, as applicable. In the event of the occurrence of any broker-assisted sale of Shares in connection with the payment of withholding taxes as provided in this Section 2.5(a): (i) any Shares to be sold through a broker-assisted sale will be sold on the day the tax withholding obligation arises, or as soon thereafter as practicable, (ii) such Shares may be sold as part of a block trade with other grantees in the Plan in which all grantees receive an average price per Share, (iii) the Grantee will be responsible for all broker's fees and other costs of sale, and Grantee agrees to indemnify and hold the Company harmless from any losses, costs, damages, or expenses relating to any such sale, (iv) to the extent the proceeds of such sale exceed the required tax withholding obligation, the Company agrees to pay such excess in cash to the Grantee as soon as reasonably practicable, (v) the Grantee acknowledges that the Company or its designee is under no obligation to arrange for such sale at any particular price, and that the proceeds of any such sale may not be sufficient to satisfy the required tax withholding obligation, and (vi) in the event the proceeds of such sale are insufficient to satisfy the required tax withholding obligation, the Grantee agrees to pay immediately upon demand to the applicable Company Group Member with respect to which the withholding obligation arises, an amount in cash sufficient to satisfy any remaining portion of the applicable Company Group Member's required withholding obligation. If any such broker-assisted sale of Shares in connection with the payment of withholding taxes as provided in this Section 2.5(a) would violate Applicable Law, then the Company may require that such required tax withholding obligation be satisfied by other methods permissible under Section 9(f) of the Plan.

(b) The Grantee is ultimately liable and responsible for, and, to the extent permitted by Applicable Law, agrees to indemnify and keep indemnified the Company Group from, all taxes owed in connection with this Award, regardless of any action taken by any Company Group Member with respect to any tax withholding obligations that arise in connection with this Award. No Company Group Member makes any representation or undertaking regarding the treatment of any tax withholding in connection with the awarding or vesting of this Award or the subsequent sale of Shares. The Company Group does not commit and is under no obligation to structure this Award to reduce or eliminate the Grantee's tax liability.

Section 2.6 Rights as Stockholder. Neither the Grantee nor any Person claiming under or through the Grantee will have any of the rights or privileges of a stockholder of the Company in respect of any Shares deliverable hereunder unless and until certificates representing such Shares (which may be in book-entry form) will have been issued and recorded on the records of the Company or its transfer agents or registrars and delivered to the Grantee (including through electronic delivery to a brokerage account). Except as otherwise provided herein, after such issuance, recordation and delivery, the Grantee will have all the rights of a stockholder of the Company with respect to such Shares, including, without limitation, the right to vote such Shares and the right to receive dividends and distributions on such Shares.

ARTICLE III.
OTHER PROVISIONS

Section 3.1 Administration. The Committee shall have the power to interpret the Plan and the Agreement and to adopt such rules for the administration, interpretation and application of the Plan and the Agreement as are consistent therewith and to interpret, amend or revoke any such rules. All actions taken and all interpretations and determinations made by the Committee will be final and binding upon

the Grantee, the Company and all other interested Persons. To the extent allowable pursuant to Applicable Law, no member of the Committee or the Board will be personally liable for any action, determination or interpretation made with respect to the Plan or the Agreement.

Section 3.2 RSUs Not Transferable. The RSUs may not be sold, pledged, assigned or transferred in any manner other than by will or the laws of descent and distribution, unless and until the Shares underlying the RSUs have been issued, and all restrictions applicable to such Shares have lapsed. No RSUs or any interest or right therein or part thereof shall be liable for the debts, contracts or engagements of the Grantee or the Grantee's successors in interest or shall be subject to disposition by transfer, alienation, anticipation, pledge, encumbrance, assignment or any other means whether such disposition be voluntary or involuntary or by operation of law by judgment, levy, attachment, garnishment or any other legal or equitable proceedings (including bankruptcy), and any attempted disposition thereof shall be null and void and of no effect, except to the extent that such disposition is permitted by the preceding sentence.

Section 3.3 Adjustments. The Committee may accelerate the vesting of all or a portion of the RSUs in such circumstances as it, in its sole discretion, may determine. The Grantee acknowledges that the RSUs and the Shares subject to the RSUs are subject to adjustment, modification and termination in certain events as provided in the Agreement and the Plan, including Section 4(d) of the Plan.

Section 3.4 Clawback. The Grantee acknowledges that the RSUs and the Shares acquired upon settlement of the RSUs shall be subject (including on a retroactive basis) to clawback, recoupment, forfeiture or similar requirements (and such requirements shall be deemed incorporated by reference into the Agreement) to the extent required by the Clawback Policy or Applicable Law (including, without limitation, Section 304 of the Sarbanes-Oxley Act and Section 954 of the Dodd-Frank Wall Street Reform and Consumer Protection Act) or as a result of any failure to comply with the Company's policy on confidential information and proprietary business information, as may be in effect from time to time.

Section 3.5 No Advice Regarding Grant. The Company is not providing any tax, legal or financial advice, nor is the Company making any recommendations regarding the Grantee's participation in the Plan, or the Grantee's acquisition or sale of the Shares underlying the RSUs. The Grantee should consult with the Grantee's personal tax, legal and financial advisors regarding participation in the Plan before taking any action related to the Plan.

Section 3.6 Insider Trading/Market Abuse Laws. The Grantee acknowledges that the Grantee may be subject to insider trading restrictions and/or market abuse laws in the United States, which may affect the Grantee's ability to acquire or sell Shares or rights to Shares (e.g., RSUs) under the Plan during such time as the Grantee is considered to have "inside information" regarding the Company (as defined under Applicable Law). Local insider trading laws and regulations may prohibit the cancellation or amendment of orders the Grantee placed before the Grantee possessed inside information. Furthermore, the Grantee could be prohibited from (i) disclosing the inside information to any third party and (ii) "tipping" third parties or causing them otherwise to buy or sell securities. The Grantee should keep in mind third parties include fellow employees. Any restrictions under these laws or regulations are separate from and in addition to any restrictions that may be imposed under any applicable insider trading policy of the Company. The Grantee is responsible for ensuring compliance with any applicable restrictions and should consult with the Grantee's personal legal advisor on this matter.

Section 3.7 Notices. Any notice to be given under the terms of the Agreement to the Company shall be addressed to the Company in care of the Chief Financial Officer at the Company's principal office, and any notice to be given to the Grantee shall be addressed to the Grantee at the Grantee's last address reflected on the Company's records. By a notice given pursuant to this Section 3.7, either party

may hereafter designate a different address for notices to be given to that party. Any notice shall be deemed duly given when sent via email or when sent by certified mail (return receipt requested) and deposited (with postage prepaid) in a post office or branch post office regularly maintained by the United States Postal Service or similar foreign entity.

Section 3.8 Headings. Headings are provided herein for convenience only and are not to serve as a basis for interpretation or construction of the Agreement.

Section 3.9 Governing Law. The laws of the State of Washington shall govern the interpretation, validity, administration, enforcement and performance of the terms of the Agreement, except for matters of corporate law, in which case the provisions of the Delaware General Corporation Law shall govern, and in each case, regardless of the law that might be applied under principles of conflicts of laws.

Section 3.10 Conformity to Securities Laws. The Grantee acknowledges that the Plan and the Agreement are intended to conform to the extent necessary with all Applicable Laws, including, without limitation, the provisions of the Securities Act of 1933, as amended from time to time, or any successor statute thereto, and the Exchange Act, and any and all regulations and rules promulgated thereunder by the SEC, and state securities laws and regulations. Notwithstanding any other provision of the Plan or the Agreement, the Plan shall be administered, and the RSUs are granted, only in such a manner as to conform to Applicable Law and shall be deemed amended to the extent necessary to conform to Applicable Law.

Section 3.11 Amendment, Suspension and Termination. To the extent permitted by the Plan, the Agreement may be wholly or partially amended or otherwise modified, suspended or terminated at any time or from time to time by the Committee or the Board, *provided* that, except as may otherwise be provided by the Plan, no amendment, modification, suspension or termination of the Agreement shall materially and adversely impair the rights of the Grantee without the prior written consent of the Grantee.

Section 3.12 Imposition of Other Requirement. The Company reserves the right to impose other requirements on the Grantee's participation in the Plan, on the RSUs and on any Shares acquired under the Plan, to the extent the Company determines it is necessary or advisable for legal or administrative reasons, and to require the Grantee to sign any additional agreements or undertakings that may be necessary to accomplish the foregoing.

Section 3.13 No Waiver. Any right of the Company Group contained in the Agreement may be waived in writing by the Committee. No waiver of any right hereunder by any party shall operate as a waiver of any other right, or as a waiver of the same right with respect to any subsequent occasion for its exercise, or as a waiver of any right to damages. No waiver by any party of any breach of the Agreement shall be held to constitute a waiver of any other breach or a waiver of the continuation of the same breach.

Section 3.14 Successors and Assigns. The Company may assign any of its rights under the Agreement to single or multiple assignees, and the Agreement shall inure to the benefit of the successors and assigns of the Company. Subject to the restrictions on transfer set forth in Section 3.2 hereof and the Plan, the Agreement shall be binding upon and inure to the benefit of the heirs, legatees, legal representatives, successors and assigns of the parties hereto.

Section 3.15 Limitations Applicable to Section 16 Persons. Notwithstanding any other provision of the Plan or the Agreement, if the Grantee is subject to Section 16 of the Exchange Act, the Plan, the RSUs and the Agreement shall be subject to any additional limitations set forth in any applicable exemptive rule under Section 16 of the Exchange Act (including any amendment to Rule 16b-3 of the Exchange Act) that are requirements for the application of such exemptive rule. To the extent permitted

by Applicable Law, the Agreement shall be deemed amended to the extent necessary to conform to such applicable exemptive rule.

Section 3.16 Not a Contract of Employment. Nothing in the Agreement or the Plan shall confer upon the Grantee any right to continue to serve as an employee or other service provider of any Company Group Member or shall interfere with or restrict in any way the rights of any Company Group Member, which rights are hereby expressly reserved, to discharge or terminate the services of the Grantee at any time for any reason whatsoever, with or without cause, except to the extent (a) expressly provided otherwise in a written agreement between a Company Group Member and the Grantee or (b) where such provisions are not consistent with Applicable Law, in which case such Applicable Law.

Section 3.17 Entire Agreement. The Plan and the Agreement (including any exhibit hereto) constitute the entire agreement of the parties and supersede in their entirety all prior undertakings and agreements of the Company and the Grantee with respect to the subject matter hereof. The Grantee expressly warrants that the Grantee is not accepting the Agreement in reliance on any promises, representations, or inducements other than those contained herein.

Section 3.18 Section 409A. This Award is not intended to constitute "nonqualified deferred compensation" within the meaning of Section 409A of the Code. However, notwithstanding any other provision of the Plan or the Agreement, if at any time the Committee determines that this Award (or any portion thereof) may be subject to Section 409A of the Code, the Committee shall have the right in its sole discretion (without any obligation to do so or to indemnify the Grantee or any other Person for failure to do so) to adopt such amendments to the Plan or the Agreement, or adopt other policies and procedures (including amendments, policies and procedures with retroactive effect), or take any other actions, as the Committee determines are necessary or appropriate for this Award either to be exempt from the application of Section 409A of the Code or to comply with the requirements of Section 409A of the Code. Any ambiguities herein will be interpreted such that all payments and benefits to U.S. taxpayers will be exempt from, or comply with, the requirements of Section 409A of the Code so that none of the RSUs provided under the Agreement will be subject to the additional tax imposed under Section 409A of the Code. Each payment payable under the Agreement is intended to constitute a separate payment for purposes of Treasury Regulation 1.409A-2(b)(2).

Section 3.19 Agreement Severable. In the event that any provision of the Agreement is held invalid or unenforceable, such provision will be severable from, and such invalidity or unenforceability will not be construed to have any effect on, the remaining provisions of the Agreement.

Section 3.20 Limitation on the Grantee's Rights. Participation in the Plan confers no rights or interests upon the Grantee other than as herein provided. The Agreement creates only a contractual obligation on the part of the Company as to amounts payable and shall not be construed as creating a trust. Neither the Plan nor any underlying program, in and of itself, has any assets. The Grantee shall have only the rights of a general unsecured creditor of the Company with respect to amounts credited and benefits payable, if any, with respect to the RSUs.

Section 3.21 Counterparts. The Grant Notice may be executed in one or more counterparts, including by way of any electronic signature, subject to Applicable Law, each of which shall be deemed an original and all of which together shall constitute one instrument.

* * * * *

ACEnet Business Incubator Campus (Nelsonville)
Tenant Lease

This Lease Agreement ("Lease") made and entered into this **July 1, 2023,** between the **Appalachian Center for Economic Networks, Inc**. (ACEnet or Lessor), an Ohio non-profit corporation (referred to herein as "ACEnet") and **Global Cooling, Inc**., (referred to herein as "Tenant or Lessee").

1. Leased Premises. ACEnet, in consideration of the rent and the covenants to be kept and performed by both parties, hereby leases to Tenant the spaces identified as Existing Tenant Space consisting of approximately **22,764 square feet** (the "Premises") in the Nelsonville Entrepreneurial Center and Business Incubator (the "Property"), located at 296 South Harper Street, Nelsonville, Ohio 45764.

The Tenant has inspected the Premises and has agreed to accept them in "as is" condition. The Premises are more particularly described in Exhibit "A" attached hereto.

2. Use of Premises. The Premises shall be used for and confined to the following operations and purposes: **warehouse and distribution of inventory**. The Tenant must obtain prior written approval of ACEnet for any alternate use. The Premises shall not be used, occupied or kept in violation of any law, municipal ordinance, or regulation or in any manner that could create a hazard affecting the insurance of the Property and/or the Premises.

3. Term.

The terms of this Lease shall be for a period of **11 (eleven) months** . Subject to the terms and conditions set forth herein, the Tenant shall have the option of renewing the lease for a one year period. Should this Lease be renewed for a period extending beyond the Original Term, or any renewal term, ACEnet reserves the right to relocate Tenant to a comparable office/space in the facility if needed at ACEnet's expense. If the Tenant leaves before the expiration of the lease, the Tenant must give 6 months' notice. A penalty equal to the remaining rent that would have been generated under the remaining term of this lease will apply and will be immediately due and payable.

4. Rent.

For the Premises and the Original Term set forth above, the Tenant agrees to pay ACEnet the following monthly amounts:

Date	Space Leased in Square Feet	Annual Rent Per Sq Ft.	Monthly/Annual Rental Rate for Premises
Year 1 – 7/1/2023	**25,444**	**$ 5.28**	**$11,195.36 / $134,344.32**
Year 2 - 6/1/2024 (renewal rate)	**25,444**	**$ 5.28**	**$11,195.36 / $134,344.32**

The rent for any subsequent annual lease period shall be determined by ACEnet, provided that the rental amount shall not be increased by more than ten percent (10%) per annum unless the annual Consumer Price Index (C.P.I.) has increased by more than ten percent (10%); in which case, ACEnet may increase the rent by a percentage equivalent to the increase in the C.P.I.

5. Tenant will comply with the Economic Development Administration (EDA) Covenant of Purpose and Use as noted below:

A. Civil Rights:

The Lessee shall not discriminate against any qualified employee or applicant for employment because of race, color, national origin, religion, sex, age or physical or mental disability.

B. Audits and Inspections:

At any time during normal business hours and as frequently as is deemed necessary, the Lessee shall make available to the Lessor and the Economic Development Administration (EDA) or EDA's authorized agents, for their examination, all of its records pertaining to matters covered by this Agreement and only matters relating to the Agreement.

C. Retention of Records:

All records in the possession of the Lessee pertaining to this Agreement shall be retained for a period of three (3) years after the expiration of the Agreement or any extensions thereof. All records shall be retained beyond the three (3) year period if audit findings have not been resolved within that period or if other disputes have not been resolved.

D. Assignment and Subletting:

Assignment and subletting are not permitted under this Agreement without prior written approval of the Economic Development Administration.

E. Environmental Compliance:

Lessor warrants and represents to the Lessee that it has no knowledge of the presence or of the release, now or in the past, of any hazardous substance or material on the Premises. Lessor agrees to hold Lessee free, harmless and indemnified from any penalty, fine, liability, cost or charge whatsoever related to any damage or condition that might be caused by any existing environmental condition that currently exists on the Premises.

Lessee covenants and agrees that throughout the Term its use and occupancy of the Premises will at all times be in strict compliance with all governmental regulations, be they federal, state or local, that pertain to the use and storage of hazardous materials and substances, and Lessee shall save and hold Lessor free, harmless and indemnified from any penalty, fine, liability, cost or charge whatsoever which Lessor may incur by reason of Lessee's failure to comply with this Paragraph. Such covenants, however, shall not apply to any condition that existed at the time Lessee first took possession of any part of the Premises, or which is caused or results from acts of others, including Lessor.

Lessee's obligations under this Paragraph shall automatically terminate and expire one (1) year after Lessee no longer occupies the Premises unless an action has been filed in some judicial tribunal of competent jurisdiction prior to that time which related to a period during which Lessee in fact did occupy any part of the Premises.

6. Additional Fees. Fees for any services provided to the Tenant, as agreed upon by the parties and attached hereto as Exhibit "C", and any other monies due to ACEnet under this Lease, shall also be due and payable on the first day of each month for the preceding month.

7. Late Charge

Any rental payment or fees for services or other monies not paid by the **fifteenth day** of each month shall be considered late. **A five percent (5%) late charge, minimum of $25**, will immediately be assessed upon the amount of the delinquent rent, fees, or monies, and the failure of the Tenant to promptly pay the same within fifteen days thereafter (by the thirtieth day of the month) will constitute an event of default and shall entitle ACEnet to terminate this Lease as provided in Paragraph 20. In the event that it becomes necessary for ACEnet to initiate legal proceedings to collect any of the rents or fees payable under this Lease, the Tenant will pay all reasonable and necessary expenses incurred by ACEnet in such legal proceedings, including reasonable attorney's fees.

8. Place of Payment. Any payment due from the Tenant to ACEnet shall be made to: ACEnet, Inc., 94 Columbus Road, Athens, Ohio 45701, or at such other place as ACEnet may designate in writing.

9. Security Deposit. A security deposit of **$2,000.00** was received from Tenant on 5/23/2019, and will be returned at the expiration or termination of the lease, less any fees, repairs or unpaid balances.

10. Common Areas. The Tenant shall have access to the restrooms, kitchenettes, hallways, dock areas and conference rooms and such other areas as may be designated common areas on the property on a shared basis. Dock areas for doors 1 & 2 will not be considered as common areas but shall be assigned to the Tenant, with limited access as needed by other facility tenants.

11. Alterations and Additions. The Tenant shall make no alterations or improvements to the Premises, including but not limited to, the construction of additional walls or the moving of walls, during the term of this Lease without first obtaining the written consent of ACEnet. Any such improvements shall also comply with all applicable building regulations and inspection requirements. Unless ACEnet shall otherwise agree in writing, Tenant shall be solely responsible for all costs and expenses for all such alterations and improvements. In addition, ACEnet shall have the right, in its sole discretion, to require the Tenant to fund an interest bearing escrow account to be used to reinstate and/or restore the Premises upon termination of this Lease. Any funds not used for such purpose shall be refunded to Tenant within a reasonable time after termination of the Lease; subject, however, to any other rights of ACEnet in or to such funds provided by law. The parties hereto agree that ACEnet shall have complete control over all aspects of such alterations and improvements. Tenant shall indemnify and hold ACEnet harmless for any claim or damages arising in connection with or related to such alterations and improvements as provided in Paragraph 15. Any alterations or improvements made by the Tenant, or on behalf of Tenant, shall become the property of ACEnet at the termination of the Lease without cost to ACEnet, unless ACEnet, in its sole discretion, directs the Tenant to remove such alterations and improvements from the Premises in which event, the Tenant shall remove such alterations, improvements and additions and restore the Premises to the same order and condition in which it was at the commencement of this Lease at the Tenant's sole cost and expense. Should the Tenant fail to do so, ACEnet may do so and collect at its option, all costs and expenses thereof, in excess of any escrow funds set aside for such purpose, from the Tenant as additional rent. The Tenant shall pay all sums due and payable as a result of all alterations made to the Premises within fifteen (15) days from the date of a notice of bill for the same from ACEnet.

12 Utilities and Services.

A. Telephone / Internet (Voice and Data Service). The Tenant shall be responsible for arranging and paying for phone line and/or internet installation charges as well as the actual costs of all service. In the event that the Tenant elects to move from the Premises to other premises within

the Property, the Tenant acknowledges that it will be liable for the foregoing installation charge for each and every such move.

B. Trash Disposal – The Tenant will be responsible for trash and recycling services designated solely for their business operations. All tenants will be provided with common area services and will not be permitted to utilize the Tenant's receptacles.

C. Lawn Care and Snow Removal – ACEnet will provide lawn care and snow removal as a common area service without additional charge to Tenant.

D. Mail Service – The Tenant will utilize a US Post Office Box for incoming mail.

13. Moveable Furniture and Equipment.

All moveable furniture and equipment installed by the Tenant shall be removed at the expiration or earlier termination of this Lease provided the Tenant shall not at such time be in default under any covenant or agreement contained in this Lease; and provided that in the event of such removal, the Tenant shall repair any and all damages incurred to the Premises and/or Property caused by removal and promptly restore the Premises and/or Property to its original order and condition.

Any such furniture or equipment not removed at or prior to termination shall be and become the property of ACEnet.

The Tenant shall not install any furniture or equipment on the Premises or make any alterations to the Premises which may require any change in heating, air conditioning, electrical, water or sewer systems without the prior written approval of ACEnet.

14. Maintenance and Repairs. ACEnet shall keep in good repair the common areas, roof, walls, all electrical, heating cooling and plumbing systems, gutters, downspouts, exterior painting, sprinkler systems, doors, docks, and windows. In addition, ACEnet will maintain the grounds of the Property, including snow removal and grass cutting.

However, ACEnet shall not be liable (and shall assess the costs thereof to the Tenant) when any repair is made necessary by the negligent or willful acts or omission of the Tenant, its agents, invitees or employees, reasonable wear and tear excepted. The Tenant will, at its own expense, keep the Premises in good repair for the term of this Lease and at the expiration of the Lease, deliver the Premises to ACEnet in like condition as when taken, reasonable wear and tear excepted. Each day that the Tenant occupies the Premises, it shall maintain the Premises in a clean, sanitary, neat and attractive condition. The Premises may contain a thermostat that regulates the heating and cooling systems in the Property. ACEnet shall determine the proper settings for the thermostats and the Tenant shall not change the settings without the prior written approval of ACEnet. ACEnet shall have access to the thermostat (if any) on a regular basis, daily if necessary, to ensure that the thermostat is being maintained at the designated settings.

15. Signs. The Tenant shall obtain the written approval of ACEnet prior to displaying any sign on the exterior or interior of the Premises. Any such sign must be of the size, color and style as ACEnet shall approve and must comply with any applicable zoning regulations.

16. Indemnification and Insurance. The Tenant will indemnify and hold harmless and assume the defense of ACEnet, its agents, employees and officials, from any and all claims, liabilities, judgments, costs, damages and expenses of any nature whatsoever, including the cost of defending such claims, which may accrue against, be charged to, be recovered from or sought to be recovered from ACEnet, its agents, employees and officials, by reason of or on account of any personal injury, sickness, or death of any person or damage to property arising from the Tenant's use and occupancy of the Premises and the operation of its business on the Property.

In order to affect the same, the Tenant agrees to purchase and keep in full force and effect at all times during the term of this Lease, commercial general liability insurance with limits of at least one million dollars ($1,000,000) per occurrence, for injuries to or death of persons, and at least one hundred thousand ($100,000) per occurrence for damage to property. Such insurance shall name ACEnet, its agents, employees and officials as additional insureds under the policy.

The Tenant shall be responsible for any damages it, its employees, agents, representatives or invitees may cause to the Premises or to any personal or other property belonging to ACEnet that may be on such Premises. Any insurance purchased by ACEnet covering the Premises or its contents will not provide any coverage for any property belonging to the Tenant. If the Tenant wishes such coverage for its property it will be solely responsible for purchasing the same. Tenant hereby acknowledges that the Property is located in a 100-year flood plain. Tenant is solely responsible for obtaining any flood insurance for its property.

All insurance policies required under this Lease shall provide that ACEnet shall be given thirty (30) days advance notice prior to the reduction of or cancellation of such insurance policies. A copy of the insurance policies or certificates showing the same to be in full force and effect shall be delivered to ACEnet before the Tenant's occupancy of the Premises.

Any deductibles or self-insured retentions applicable to required coverages shall be paid by the Tenant, and shall not be required to participate therewith. The insurance required hereunder shall be primary and any insurance or self-insurance maintained by ACEnet shall be excess of the Tenant's insurance and shall not contribute therewith. Failure of the Tenant to comply with any reporting provisions of the insurance policies required hereunder shall not affect coverage provided to ACEnet. All rights of subrogation against ACEnet shall be waived. All coverages for subcontractors of the Tenant, if any, shall be subject to all of the requirements stated herein.

The failure of the Tenant to maintain and pay all insurance premiums when due and payable shall be grounds for the immediate termination of this Lease by ACEnet, any contrary provisions contained in Paragraphs 3, 19 or 20 hereof notwithstanding.

17. Release. The Tenant hereby releases ACEnet, its agents, employees and officials, from any liability or responsibility to the Tenant or any other person, claiming through it by way of subrogation or otherwise, for any loss or damage to the Tenant's property or the property of any of its agents, employees, representatives or invitees which is brought onto the Premises, regardless of how such loss or damage may occur, unless such damage or loss was caused by the negligence of ACEnet, its agents, employees, or officials. It is expressly agreed and understood that the Tenant, its agents, employees, representatives or invitees, in bringing property in and onto the Premises do so at their own risk. It is further agreed and understood that ACEnet, its agents, employees and officials, will not be liable to the Tenant for any business losses or damages to the property of the Tenant, its employees, representatives, agents or invitees, occasioned by the acts or omissions of other businesses or persons which may occupy the Property.

18. Assigning, Mortgaging, Subletting. The Tenant agrees not to sublet, assign, transfer, or mortgage this Lease or sublet the Premises in whole or in part without the prior written consent of ACEnet.

19. Access to Premises. At any reasonable time ACEnet may enter the Premises to inspect and or make repairs necessary under the terms of this Lease. At any time within sixty (60) days before the termination of this Lease, ACEnet may enter the Premises at reasonable hours to exhibit same to prospective Tenants. ACEnet reserves the right to inspect the Premises at all reasonable times in order to ensure that the Tenant is complying with the provisions of this Lease. ACEnet will provide the Tenant with keys giving access to the Premises in accordance with the attached "Key Agreement," a copy of which is attached hereto as Exhibit "D."

20. Cancellation or Modification of Lease by ACEnet or the Tenant.

In the event that the Tenant desires to change the size or location of the Premises leased under this Lease through either expansion of the existing Premises (where feasible) or relocation to another section of the Property, this Lease may be modified by the Tenant providing notice to ACEnet at least ninety (90) days prior to the date of modification, provided that a modified lease is successfully negotiated between ACEnet and the Tenant for the new premises.

Notwithstanding any contrary provisions contained herein, in the event that ACEnet believes, in its sole discretion, that the Tenant is not making satisfactory technical, marketing, manufacturing or financial progress as an incubator Tenant or for any other reason it deems appropriate, ACEnet may cancel this Lease by providing the Tenant with at least ninety (90) days' notice prior to the date of cancellation.

21. Default. The occurrence of any of the following conditions shall constitute an "Event of Default" under this Lease and shall entitle ACEnet at its option to terminate the Lease in which event the Tenant shall vacate the Premises within three (3) days of the date of notice to vacate:

A. The Tenant fails to pay within thirty (30) days of the date due, any rent, additional rent, service fees, or other monies provided for in this Lease.

B. The Premises are vacated even though the Tenant continues to pay stipulated monthly rent.

C. Any petition or other action is filed by or against the Tenant under any section or chapter of the Federal Bankruptcy Act.

D. The Tenant becomes insolvent or transfers property in fraud of creditors.

E. The Tenant fails to comply with any provision or covenant of this Lease, any agreement attached hereto, and/or any of the rules and regulations which may be established by ACEnet from time to time.

F. The Tenant is responsible for and fails to remove or satisfy any mechanic's lien or other claim or lien assessed or charged against or otherwise encumbering the Premises or Property within thirty (30) days after such lien or claim arises.

Should the Tenant fail to vacate the Premises upon expiration of the time period set forth in the notice to vacate, ACEnet shall have the right to reenter the Premises and remove the Tenant and its effects without being liable for any damages thereto. The failure by ACEnet to call for a termination of the Lease at any time shall not constitute a waiver of ACEnet's right to do so at a subsequent time. Upon the occurrence of an Event of Default, in addition to termination, ACEnet shall also be entitled to recover from the Tenant all unpaid rent through the end of the term as well as any other sums for which the Tenant is liable under the terms of this Lease, including attorney's fees. The foregoing rights shall be in addition to, and not in lieu of, any other rights and remedies which ACEnet may be entitled to by law.

22. Damage or Destruction of Premises. If the Premises shall be damaged or destroyed in whole or in part, by fire, acts of God, war or casualty or any other means so as to make the same untenantable, as determined by Lessor and Lessee, ACEnet shall have the option of repairing the Premises or of canceling this Lease in its entirety as of the date of the damage or destruction of the Premises. There shall be no obligation whatsoever on ACEnet to repair or rebuild the Premises in case of damage or destruction.

If ACEnet elects to repair or rebuild the damaged Premises, during the period that the Premises are untenantable to the Tenant, the rent and any other fees under this lease shall be abated until the Premises are restored to a good tenantable condition. If the Premises are untenantable in part, the rent shall be prorated until the Premises can be restored to a good and tenantable condition provided that:

A. If any delay in repair or restoration is caused by the Tenant failing to adjust its own insurance or remove its damaged goods, equipment or other property within a reasonable time, the rent shall not abate during the period of such delay.

B. If any damage to the Premises is caused by the negligent or willful acts or omissions of the Tenant, its agents or employees, there shall be no rent abatement.

23. Subordination. The Tenant agrees that this Lease and its interest therein shall be secondary to any mortgage, deed of trust, or any other instrument of financing or refinancing now or hereafter placed on the Premises or on the land underlying the Premises and/or the Property. The Tenant agrees to execute and deliver to ACEnet any and all documents that may be required to show that the Tenant's rights hereunder are secondary.

24. Holding Over. If the Tenant remains in possession of the Premises after the expiration of the Original Term, or any renewal thereof, as the case may be, such occupancy shall not be deemed or construed to be a renewal or extension of this Lease, but shall operate to create a month to month tenancy under the conditions of this Lease, so far as applicable, and the rental due for each period shall be two hundred percent (200%) of the rent normally payable under the terms of this Lease unless otherwise agreed in writing by ACEnet.

25. Relationship of ACEnet and the Tenant. The Tenant shall not use any trademark, service mark, logo or trade name of ACEnet, nor shall the Tenant represent itself as having any business affiliation with ACEnet, except with the expressed written consent of ACEnet.

26. Rules and Regulations.

ACEnet shall have the right from time to time to promulgate and enforce rules and regulations with respect to the use and operation of the Premises, Property and common areas and to amend such rules and regulations from time to time. The Tenant shall faithfully observe and comply with these rules and regulations, when such rules and regulations have been implemented and provided to Tenant in writing.

The Tenant recognizes the rights of the other tenants in the facility and will not disrupt, impede or otherwise interfere with the rights of other tenants in and to the facility by noise, objectionable use, disregard for safety and cleanliness or any other action or behavior which might be objectionable, in ACEnet's sole discretion, to other tenants.

27. Binding Successors. This Lease is binding on the respective heirs, successors, representatives and assigns of the parties hereto.

28. Construction of Lease:

A. Applicable Law. The laws of the State of Ohio shall govern the validity, interpretation, performance and enforcement of this Lease.

B. Titles and Headings. The titles and headings of this Lease are used only for convenience and are not to be construed as part of the Lease.

C. Entire Agreement. This Lease and its attachments, including the Letter of Commitment, the Services Agreement, and Key Agreement, shall be considered to contain the entire agreement between the parties hereto pertaining to the Premises and all negotiations and all agreements acceptable to both parties are included herein.

29. Notice. Wherever this Lease requires notice to be served on the Tenant or ACEnet, notice shall be sufficient if by actual delivery or if mailed by first class mail with postage fully prepaid to the following address and persons:

To ACEnet:	To the Tenant:
ACEnet, Inc. 94 Columbus Road Athens, Ohio 45701	Global Cooling, Inc. 6000 Poston Road Athens, Ohio 45701

30. Non-discrimination. The Tenant covenants and agrees that in its use, operation and occupancy of the Premises no persons on the grounds of race, sex, color or national origin, shall be excluded from participation in, denied the benefits or, or otherwise be subjected to discrimination in the operation of the Tenant's business and use of the Premises.

In WITNESS WHEREOF, the parties hereto have executed this Lease on the date first above written:

ACEnet: Appalachian Center for Economic Networks, Inc., an Ohio Non-Profit Corporation

By: _____
Larry G. Fisher, Executive Director

_____
Date

Tenant: Global Cooling, Inc. /Stirling Ultracold

By: _____
Geraint Phillips, SVP Global Operations

_____
Date

Exhibit A
Description of Leased Premises

"Existing Tenant Space –" is identified with shading on the attached floor plan of the premises.

Exhibit C
Services Agreement

Standard Services Offered	*Services Selected by Tenant*	*Fees*
1. Use of parking lot	_____	Included
2. Use of loading dock	_____	Included
3. Grounds maintenance	_____	Included
4. Snow removal	_____	Included

Additional Services Offered at Tenant's Request:	*Fees:*
1. Use of pallet racks in space	0
2. Use of fork lift	

GLOBAL COOLING

DOCK DOORS
GREEN SPACE- LEASED
BLUE SPACE- NO LEASE

Exhibit A
Description of Leased Premises

WAIVER AND FIRST AMENDMENT
TO
LOAN AND SECURITY AGREEMENT

This Waiver and First Amendment to Loan and Security Agreement (this "Amendment") is entered into this 26th day of February, 2024, by and among (a) **SILICON VALLEY BANK, A DIVISION OF FIRST-CITIZENS BANK & TRUST COMPANY** ("**Bank**") and (b)(i) **BIOLIFE SOLUTIONS, INC.**, a Delaware corporation ("**BioLife**"), (ii) **SAVSU TECHNOLOGIES, INC.**, a Delaware corporation ("**SavSu**"), (iii) **ARCTIC SOLUTIONS, INC.**, a Delaware corporation ("**Arctic**"), (iv) **SCISAFE HOLDINGS, INC.**, a Delaware corporation ("**SciSafe**"), (v) **GLOBAL COOLING, INC.**, a Delaware corporation ("**Global Cooling**"), and (vi) **SEXTON BIOTECHNOLOGIES, INC.**, a Delaware corporation ("**Sexton**; together with BioLife, SavSu, Arctic, SciSafe, and Global Cooling, individually and collectively, jointly and severally, "**Borrower**").

RECITALS

A. Bank and Borrower have entered into that certain Loan and Security Agreement dated as of September 20, 2022 (as the same may from time to time be amended, modified, supplemented or restated, the "Loan Agreement").

B. Bank has extended credit to Borrower for the purposes permitted in the Loan Agreement.

C. Borrower has requested that Bank amend the Loan Agreement to (i) waive the Stated Defaults (as defined below) and (ii) make certain revisions to the Loan Agreement as more fully set forth herein.

D. Bank has agreed to so waive the Stated Defaults (as defined below) and amend certain provisions of the Loan Agreement, but only to the extent, in accordance with the terms, subject to the conditions and in reliance upon the representations and warranties set forth below.

AGREEMENT

NOW, THEREFORE, in consideration of the foregoing recitals and other good and valuable consideration, the receipt and adequacy of which is hereby acknowledged, and intending to be legally bound, the parties hereto agree as follows:

1. Definitions. Capitalized terms used but not defined in this Amendment shall have the meanings given to them in the Loan Agreement.

2. Amendments to Loan Agreement.

2.1 Section 5.7(a) (Accounts). Section 5.7(a) is amended in its entirety and replaced with the following:

> " (a) Maintain all of Borrower's, any of its Subsidiaries', and any Guarantor's operating accounts, depository accounts and excess cash with Bank

or Bank's Affiliates. Notwithstanding the foregoing, subject to compliance with the Account Threshold (i) Borrower may maintain one (1) account with Pacific Western Bank (the "**PacWest Account**") in an amount not to exceed $2,000,000.00 at any time which shall be subject to a Control Agreement in favor of Bank pursuant to Section 5.7(c) and 5.15 and (ii) Borrower and its Subsidiaries may maintain up to six (6) foreign bank accounts with HSBC in an aggregate amount not to exceed the lesser of (x) $5,000,000.00 or (y) 20.0% of Borrower's, its Subsidiaries' and Guarantor's consolidated cash wherever located at any time (the "**Permitted Foreign HSBC Accounts**"). In addition to the foregoing, Borrower shall at all times have unrestricted cash in accounts maintained in the name of Borrower with Bank, in an amount equal to the lesser of (i) one hundred percent (100.0%) of the Dollar value of all account balances of Borrower, its Subsidiaries, and any Guarantor, wherever located, and (ii) one hundred ten percent (110.0%) of the then-outstanding Obligations of Borrower to Bank (the "**Account Threshold**")."

2.2 Section 5.7(c) (Accounts). Section 5.7(c) is amended in its entirety and replaced with the following:

" (c) In addition to and without limiting the restrictions in (a), Borrower shall provide Bank five (5) days prior written notice before establishing any Collateral Account at or with any bank or financial institution other than Bank or Bank's Affiliates. For each Collateral Account that Borrower at any time maintains, Borrower shall cause the applicable bank or financial institution (other than Bank) at or with which any Collateral Account is maintained to execute and deliver a Control Agreement or other appropriate instrument with respect to such Collateral Account to perfect Bank's Lien in such Collateral Account in accordance with the terms hereunder which Control Agreement may not be terminated without the prior written consent of Bank. The provisions of the previous sentence shall not apply to (i) the Permitted Foreign HSCBC Accounts, or (ii) deposit accounts exclusively used for payroll, payroll taxes, and other employee wage and benefit payments to or for the benefit of Borrower's employees and identified to Bank by Borrower as such."

2.3 Section 5.15 (Control Agreement). The Loan Agreement is amended by inserting the following new Section 5.15 to appear immediately following Section 5.14 thereof:

" **5.15 Control Agreement**. On or prior to [_____], 2024 *[date which is 30 days after the date of this Amendment – to be completed at closing]*, Borrower shall deliver to Bank a duly executed Control Agreement in favor of Bank with respect to the PacWest Account."

2.4 Section 12.2 (Definitions). The following new term and its respective definition is hereby inserted to appear alphabetically in Section 12.2 thereof:

" "**Account Threshold**" is defined in Section 5.7(a)."

3. Limitation of Amendments.

3.1 The amendments set forth in Section 2 above are effective for the purposes set forth herein and shall be limited precisely as written and shall not be deemed to (a) be a consent to any amendment, waiver or modification of any other term or condition of any Loan Document, or (b) otherwise prejudice any right or remedy which Bank may now have or may have in the future under or in connection with any Loan Document.

3.2 This Amendment shall be construed in connection with and as part of the Loan Documents and all terms, conditions, representations, warranties, covenants and agreements set forth in the Loan Documents, except as herein amended, are hereby ratified and confirmed and shall remain in full force and effect.

4. Waiver. Bank hereby waives Borrower's existing defaults under the Loan Agreement by virtue of Borrower's failure to comply with Section 5.7(a) of the Loan Agreement (as in effect prior to this Amendment) with respect to the depository account requirements prior to the date hereof, and (ii) to comply with Section 5.7(c) of the Loan Agreement (as in effect prior to this Amendment) with respect to the requirement to deliver a Control Agreement for any Permitted Temporary Account upon the expiration of the Transition Period ((i) and (ii), collectively, the "**Stated Defaults**"). Bank's waiver of the Stated Defaults shall apply only to the foregoing specific period. Borrower hereby acknowledges and agrees that except as specifically provided herein, nothing in this Section or anywhere in this Amendment shall be deemed or otherwise construed as a waiver by Bank of any of its rights and remedies pursuant to the Loan Documents, applicable law or otherwise.

5. Representations and Warranties. To induce Bank to enter into this Amendment, Borrower hereby represents and warrants to Bank as follows:

5.1 Immediately after giving effect to this Amendment (a) the representations and warranties contained in the Loan Documents are true, accurate and complete in all material respects as of the date hereof (except to the extent such representations and warranties relate to an earlier date, in which case they are true and correct as of such date), and (b) no Event of Default has occurred and is continuing;

5.2 Borrower has the power and authority to execute and deliver this Amendment and to perform its obligations under the Loan Agreement, as amended by this Amendment;

5.3 The organizational documents of Borrower delivered to Bank on the Effective Date remain true, accurate and complete and have not been amended, supplemented or restated and are and continue to be in full force and effect;

5.4 The execution and delivery by Borrower of this Amendment and the performance by Borrower of its obligations under the Loan Agreement, as amended by this Amendment, have been duly authorized;

5.5 The execution and delivery by Borrower of this Amendment and the performance by Borrower of its obligations under the Loan Agreement, as amended by this

Amendment, do not and will not contravene (a) any law or regulation binding on or affecting Borrower, (b) any contractual restriction with a Person binding on Borrower, (c) any order, judgment or decree of any court or other governmental or public body or authority, or subdivision thereof, binding on Borrower, or (d) the organizational documents of Borrower;

5.6 The execution and delivery by Borrower of this Amendment and the performance by Borrower of its obligations under the Loan Agreement, as amended by this Amendment, do not require any order, consent, approval, license, authorization or validation of, or filing, recording or registration with, or exemption by any governmental or public body or authority, or subdivision thereof, binding on Borrower, except as already has been obtained or made; and

5.7 This Amendment has been duly executed and delivered by Borrower and is the binding obligation of Borrower, enforceable against Borrower in accordance with its terms, except as such enforceability may be limited by bankruptcy, insolvency, reorganization, liquidation, moratorium or other similar laws of general application and equitable principles relating to or affecting creditors' rights.

6. Release by Borrower:

6.1 FOR GOOD AND VALUABLE CONSIDERATION, Borrower hereby forever relieves, releases, and discharges Bank and its present or former employees, officers, directors, agents, representatives, attorneys, and each of them, from any and all claims, debts, liabilities, demands, obligations, promises, acts, agreements, costs and expenses, actions and causes of action, of every type, kind, nature, description or character whatsoever, whether known or unknown, suspected or unsuspected, absolute or contingent, arising out of or in any manner whatsoever connected with or related to facts, circumstances, issues, controversies or claims existing or arising from the beginning of time through and including the date of execution of this Amendment (collectively "**Released Claims**"). Without limiting the foregoing, the Released Claims shall include any and all liabilities or claims arising out of or in any manner whatsoever connected with or related to the Loan Documents, the recitals hereto, any instruments, agreements or documents executed in connection with any of the foregoing or the origination, negotiation, administration, servicing and/or enforcement of any of the foregoing.

6.2 In furtherance of this release, Borrower expressly acknowledges and waives any and all rights under Section 1542 of the California Civil Code, which provides as follows:

> "**A general release** does not extend to claims that the creditor or releasing party does not know or suspect to exist in his or her favor at the time of executing the release and that, if known by him or her, would have materially affected his or her settlement with the debtor or released party." (Emphasis added.)

6.3 By entering into this release, Borrower recognizes that no facts or representations are ever absolutely certain and it may hereafter discover facts in addition to or different from those which it presently knows or believes to be true, but that it is the intention of Borrower hereby to fully, finally and forever settle and release all matters, disputes and differences,

known or unknown, suspected or unsuspected; accordingly, if Borrower should subsequently discover that any fact that it relied upon in entering into this release was untrue, or that any understanding of the facts was incorrect, Borrower shall not be entitled to set aside this release by reason thereof, regardless of any claim of mistake of fact or law or any other circumstances whatsoever. Borrower acknowledges that it is not relying upon and has not relied upon any representation or statement made by Bank with respect to the facts underlying this release or with regard to any of such party's rights or asserted rights.

6.4 This release may be pleaded as a full and complete defense and/or as a cross-complaint or counterclaim against any action, suit, or other proceeding that may be instituted, prosecuted or attempted in breach of this release. Borrower acknowledges that the release contained herein constitutes a material inducement to Bank to enter into this Amendment, and that Bank would not have done so but for Bank's expectation that such release is valid and enforceable in all events.

6.5 Borrower hereby represents and warrants to Bank, and Bank is relying thereon, as follows:

(a) Except as expressly stated in this Amendment, neither Bank nor any agent, employee or representative of Bank has made any statement or representation to Borrower regarding any fact relied upon by Borrower in entering into this Amendment.

(b) Borrower has made such investigation of the facts pertaining to this Amendment and all of the matters appertaining thereto, as it deems necessary.

(c) The terms of this Amendment are contractual and not a mere recital.

(d) This Amendment has been carefully read by Borrower, the contents hereof are known and understood by Borrower, and this Amendment is signed freely, and without duress, by Borrower.

(e) Borrower represents and warrants that it is the sole and lawful owner of all right, title and interest in and to every claim and every other matter which it releases herein, and that it has not heretofore assigned or transferred, or purported to assign or transfer, to any person, firm or entity any claims or other matters herein released. Borrower shall indemnify Bank, defend and hold it harmless from and against all claims based upon or arising in connection with prior assignments or purported assignments or transfers of any claims or matters released herein.

7. Fees and Expenses. Borrower shall reimburse Bank for all unreimbursed Bank Expenses, including without limitation, all legal fees and expenses incurred in connection with this Amendment.

8. Governing Law. This Amendment shall be governed and construed in accordance with the laws of the State of California, without giving effect to conflicts of laws principles.

9. Integration. This Amendment and the Loan Documents represent the entire agreement about this subject matter and supersede prior negotiations or agreements. All prior agreements, understandings, representations, warranties, and negotiations between the parties

about the subject matter of this Amendment and the Loan Documents merge into this Amendment and the Loan Documents.

10. Counterparts. This Amendment may be executed in any number of counterparts and all of such counterparts taken together shall be deemed to constitute one and the same instrument. Each party hereto may execute this Amendment by electronic means and recognizes and accepts the use of electronic signatures and records by any other party hereto in connection with the execution and storage hereof.

11. Effectiveness. This Amendment shall be deemed effective upon the due execution and delivery to Bank of this Amendment by each party hereto.

[Signature page follows.]

IN WITNESS WHEREOF, the parties hereto have caused this Amendment to be executed as of the date first written above.

BANK

FIRST-CITIZENS BANK & TRUST COMPANY

By: _____

Name: Peter Sletteland

Title: Managing Director

BORROWER

BIOLIFE SOLUTIONS, INC.

By: _____

Name: Troy Wichterman

Title: Chief Financial Officer

SAVSU TECHNOLOGIES, INC.

By:_____

Name: Troy Wichterman

Title: Secretary, Vice President, Treasurer

ARCTIC SOLUTIONS, INC.

By:_____

Name: Troy Wichterman

Title: Secretary, Vice President, Treasurer

SCISAFE HOLDINGS, INC.

By:_____

Name: Troy Wichterman

Title: Secretary, Vice President, Treasurer

GLOBAL COOLING, INC.

By: _____

Name: Troy Wichterman

Title: Secretary, Vice President, Treasurer

SEXTON BIOTECHNOLOGIES, INC.

By: _____

Name: Troy Wichterman

Title: Secretary, Vice President, Treasurer

FIRST AMENDMENT TO AMENDED EXECUTIVE EMPLOYMENT AGREEMENT

THIS FIRST AMENDMENT TO AMENDED EXECUTIVE EMPLOYMENT AGREEMENT ("Amendment") is an agreement made between BioLife Solutions, Inc., a Delaware corporation ("Employer" or the "Company"), and Aby J. Mathew, PhD ("Executive"). Executive and the Employer are sometimes referred to herein as the "Parties." The effective date is January 5, 2023 ("Effective Date").

WHEREAS, the Parties entered into that certain Amended Executive Employment Agreement effective December 1, 2020 as amended (the "Agreement"); and

WHEREAS, the Parties wish to amend the Agreement as set forth herein;

NOW, THEREFORE, in consideration of the mutual promises and covenants set forth herein, and for other good and valuable consideration, the receipt of and sufficiency of which are hereby acknowledged, the Employer and the undersigned Executive agree as follows:

1. *Defined Terms*. Except as specifically provided herein, capitalized terms not defined herein shall have the meanings ascribed to them in the Agreement.

2. *Amendment of Section 5.d(ii)*. As of the Effective Date, Section 5.d(ii) of the Agreement is hereby deleted and replaced in its entirety with the following (exclusive of subparagraphs (A) through (E) of the Agreement which are not deleted shall remain in full force and effect):

5. . . .
d. . . .
ii. Employer may terminate Executive's employment under this Agreement or Executive may resign for Good Reason upon or within 12 months following a Change in Control without advance notice; provided, however, that Employer will pay, no later than sixty (60) days from the termination date in a lump sum:

. . .

3. *Amendment of Section 5.(d)(iv).* As of the Effective Date, Section 5.d(ii) of the Agreement is hereby deleted and replaced in its entirety with the following:

5 . . . .
d. . . .
iv. Upon termination of Executive's employment hereunder due to a Change in Control, including by Executive for Good Reason, all unvested stock options, awards, or other equity grants or awards shall immediately fully vest. Executive or Executive's estate (as the case may be) shall be entitled to receive any vested benefits required to be paid by law and any vested compensation required to be paid by law.

4. *No Other Amendments*. Nothing in this Amendment is intended to amend any language of the Agreement other than as specifically set forth above, and the remainder of the Agreement shall be unmodified and remain in full force and effect.

IN WITNESS WHEREOF, the parties hereto have executed this First Amendment to Amended Executive Employment Agreement as of the date and year first above written.

BIOLIFE SOLUTIONS, INC.

By:_____
Michael Rice
Chief Executive Officer

EXECUTIVE:

_____
Aby J. Mathew, PhD

AMENDED AND RESTATED EXECUTIVE EMPLOYMENT AGREEMENT

THIS AMENDED AND RESTATED EXECUTIVE EMPLOYMENT AGREEMENT (this "Agreement") is made between BioLife Solutions Inc., a Delaware corporation ("Employer" or the "Company"), and Todd Berard ("Executive"). Executive and the Company are sometimes referred to herein as the "Parties". The effective date of this Agreement is June [1], 2023. This Agreement supersedes and replaces all prior employment agreements (and any amendments thereto) between the Company and Executive, including, for the avoidance of doubt, the employment agreement between the Parties that became effective on December 1, 2020 and any amendments thereto.

RECITALS

A. Employer is in the business (the "Business") of manufacturing and marketing biopreservation media and cold chain products for cells, tissues, and organs.

B. Employer desires to obtain the services of Executive, in which capacity Executive has access to Employer's Confidential Information (as hereinafter defined), and to obtain assurance that Executive will protect Employer's Confidential Information and will not compete with Employer or solicit its customers or its other employees during the term of employment and for a reasonable period of time after termination of employment pursuant to this Agreement, and Executive is willing to agree to these terms.

C. Executive desires to be assured of the salary and other benefits provided for in this Agreement.

AGREEMENT

NOW, THEREFORE, in consideration of the mutual covenants herein contained, and other good and valuable consideration, the sufficiency and receipt of which are hereby acknowledged, the parties agree as follows:

1. **Employment**.

a. Employer hereby employs Executive, and Executive agrees to be employed as Senior Vice President and Chief Marketing Officer ("CMO"), in accordance with the terms and conditions set forth in this Agreement. Changes may be made from time to time by Employer and/or the Board in its sole discretion to the duties, authorities, reporting relationships and title of Executive.

b. Executive will devote full time, attention, and best efforts to achieving the purposes and discharging the responsibilities of the CMO. Executive will comply with all rules, policies and procedures of Employer as modified from time to time, including without limitation, rules and procedures set forth in the Employer's employee handbook, supervisor's manuals and operating manuals.

Executive will perform all of Executive's responsibilities in compliance with all applicable laws and will ensure that the operations that Executive manages are in compliance with all applicable laws. During Executive's employment, Executive will not engage in any other business activity which, in the reasonable judgment of the Employer, conflicts with the duties of Executive under this Agreement, whether or not such activity is pursued for gain, profit or other pecuniary advantage.

c. Nothing herein shall preclude Executive from: (1) continuing to serve on the board of directors or trustees of any business corporation or any charitable organization on which Executive currently serves and which is identified on Exhibit A hereto, or (2) subject to the prior approval of the Board, appointment to any additional directorships or trusteeships, or (3) serving in an advisory role for other business entities, provided in each case, and in the aggregate, that such activities do not interfere with the performance of Executive's duties hereunder or conflict with Section 7 of this Agreement.

2. **Term of Employment**. The term of employment ("Term") will not be for a definite period, but rather continue indefinitely until terminated in accordance with the terms and conditions of this Agreement.

3. **Compensation.** For the duration of Executive's employment hereunder, the Executive will be entitled to compensation which will be computed and paid pursuant to the following subparagraphs.

a. **Base Salary.** Employer will pay to Executive a base salary ("Base Salary") at an annual rate of three hundred thirty-two thousand Dollars ($332,000), payable in such installments (but in no event less than monthly), subject to withholdings and deductions as required or permitted by law, as is Employer's policy with respect to other employees. Executive's Base Salary will be reviewed periodically by the Board of Directors of Employer during the term of Executive's employment and may be adjusted in the sole discretion of the Board of Directors based on such review, but will not be reduced by Employer unless a material adverse change in the financial condition or operations of Employer has occurred or unless Executive's responsibilities are altered to reflect less responsibility.

b. **Performance Bonus.** Employer under direction of its Board may pay or cause to be paid to Executive such Bonus as it from time to time determines appropriate.

4. **Other Benefits**.

a. **Certain Benefits.** Executive will be eligible to participate in all employee benefit programs established by Employer that are applicable to management personnel such as medical, pension, disability and life insurance plans on a basis commensurate with Executive's position and in accordance with Employer's

policies from time to time, but nothing herein shall require the adoption or maintenance of any such plan.

b. **Vacations, Holidays and Expenses.** Executive will be provided accrued paid vacation of three (3) weeks each calendar year, which shall be the maximum number of days Executive may accrue at any time, and which shall be taken at such times as are consistent with Executive's responsibilities hereunder. Executive will be provided such holidays and vacation as Executive makes available to its management level employees generally. Employer will reimburse Executive in accordance with company policies and procedures for reasonable expenses necessarily incurred in the performance of duties hereunder against appropriate receipts and vouchers indicating the specific business purpose for each such expenditure. In no case shall any reimbursement be made later than December 31st of the year following the calendar year in which such expense is incurred.

c. **Right of Set-off.** By accepting this Agreement, Executive consents to a deduction from any amounts Employer owes Executive from time to time (including amounts owed to Executive as wages or other compensation, fringe benefits, or vacation pay, as well as any other amounts owed to Executive by Employer), to the extent of the amounts Executive owes to Employer. Whether or not Employer elects to make any set-off in whole or in part, if Employer does not recover by means of set-off the full amount Executive owes it, calculated as set forth above, Executive agrees to pay immediately the unpaid balance to Employer.

5. **Termination, Discharge**.

a. **For Cause.** Employer will have the right to immediately terminate Executive's services and this Agreement for Cause. "Cause" means the Employer's belief that any of the following has occurred:

(i) any breach of this Agreement by Executive, including, without limitation, breach of Executive's covenants in Sections 7, 8, 9, 10, 11 or 12;

(ii) any failure to perform assigned job responsibilities that continues unremedied for a period of ten (10) days after written notice to Executive by Employer;

(iii) Executive's malfeasance or misconduct in connection with Executive's duties hereunder or any act or omission of Executive which is materially injurious to the financial condition or business reputation of the Company or any of its subsidiaries or affiliates,

(iv) commission or conviction of a felony or misdemeanor (other than a misdemeanor traffic violation), including a plea of guilty or failure to contest prosecution for a felony or misdemeanor;

(v) the Employer's reasonable belief that Executive engaged in a violation of any statute, rule or regulation, any of which in the judgment of Employer is harmful to the Business or to Employer's reputation;

(vi) the Employer's reasonable belief that Executive engaged in unethical practices, dishonesty or disloyalty, unless Executive has evidence establishing that Employer directed Executive to commit such practice or act;

(vii) or any reason that would constitute Cause under the laws the State of Washington.

Upon termination of Executive's employment hereunder for Cause, the Company shall pay the Executive no later than fourteen (14) days from the termination date in a lump sum: (x) Executive's salary through the date of termination, (y) for any unused vacation time, and (z) for any unreimbursed business expenses that are subject to reimbursement under Employer's then current policy on business expenses. Executive will have no rights to any unvested benefits or any other compensation or payments after the termination date.

b. **Due to Death or Disability.** Employer will have the right to immediately terminate Executive's services and this Agreement due to death or disability. For purposes of this Agreement, "disability" means the incapacity or inability of Executive, whether due to accident, sickness or otherwise, as determined by a medical doctor acceptable to the Board of Directors of Employer and confirmed in writing by such doctor, to perform the essential functions of Executive's position under this Agreement, with or without reasonable accommodation (provided that no accommodation that imposes undue hardship on Employer will be required) for a period of sixty (60) consecutive days or for an aggregate of ninety (90) days during any period of twelve (12) months, or such longer period as may be required under disability law.

Upon termination of Executive's employment hereunder due to death or disability, the Company shall pay the Executive no later than fourteen (14) days from the termination date in a lump sum: (i) Executive's salary through the date of termination, (ii) a prorated portion of any incentive bonus opportunity previously approved by the Board, (iii) for any unused vacation time, and (iv) for any unreimbursed business expenses that are subject to reimbursement under Employer's then current policy on business expenses. Upon termination of Executive's employment hereunder due to death or disability, all unvested stock options, awards, or other equity grants or awards shall immediately fully vest for the benefit of Executive's estate. Executive or Executive's estate (as the case may be) shall be entitled to receive any vested benefits required to be paid by law and any vested compensation required to be paid by law.

c. **Without Cause.** Employer may terminate Executive's employment under this Agreement without cause and without advance notice; provided, however, that Employer will pay (unless subparagraph 5.d of this Agreement applies, in which case the provisions therein shall govern), no later than fourteen (14) days from the termination date in a lump sum:

(i) (x) Executive's salary through the date of termination, (y) for any unused vacation time, and (z) for any unreimbursed business expenses that are subject to reimbursement under Employer's then current policy on business expenses.

(ii) severance pay of twelve (12) months' worth of Executive's salary at the rate in effect on the termination date.

(iii) the amount equal to the cost of twelve (12) months' medical insurance premiums at a monthly amount equal to the amount of COBRA coverage in effect as of the termination date; and

(iv) an additional tax gross up payment in an amount necessary so that the amount received by Executive to cover COBRA premiums under Section 5.c(iii) after all applicable withholding tax is deducted (using applicable supplemental wage withholding rates) is the full amount Executive would have received under Section 5.c(iii) if no tax withholding was made.

Such payments will be subject to all appropriate deductions and withholdings. Upon termination of Executive's employment hereunder due to termination without cause, all unvested stock options, awards, or other equity grants or awards shall immediately fully vest. Executive or Executive's estate (as the case may be) shall be entitled to receive any vested benefits required to be paid by law and any vested compensation required to be paid by law.

Executive shall only be entitled to such severance pay if, within thirty (30) days following the date of termination, both Employer and Executive have signed (and then Executive does not rescind, as may be permitted by law) a mutual general release of claims in a form mutually acceptable to both parties (provided, however, that such release of claims shall only require each party to release the other party from claims relating directly to Executive's employment and the termination thereof, and shall not require Executive to release claims relating to vested employee benefits or relating to other matters, including, but not limited to, claims relating to Executive's status as a shareholder of the Company.

d. **Change in Control**.

(i) For purposes of this Agreement, Change in Control shall mean (x) the consummation of a merger or consolidation of the Company

with or into another entity, (y) the dissolution, liquidation or winding up of the Company or (z) the sale of all or substantially all of the Company's assets. The foregoing notwithstanding, a merger or consolidation of the Company shall not constitute a "Change in Control" if immediately after such merger or consolidation a majority of the voting power of the capital stock of the continuing or surviving entity, or any direct or indirect parent corporation of such continuing or surviving entity, will be owned by the persons who were the Company's stockholders immediately prior to such merger or consolidation in substantially the same proportions as their ownership of the voting power of the Company's capital stock immediately prior to such merger or consolidation.

(ii) Employer may terminate Executive's employment under this Agreement or Executive may resign for Good Reason upon or within 12 months following a Change in Control without advance notice; provided, however, that Employer will pay, no later than sixty (60) days from the termination date in a lump sum:

(A) (i) Executive's salary through the date of termination, (ii) for any unused vacation time, and (iii) for any unreimbursed business expenses that are subject to reimbursement under Employer's then current policy on business expenses;

(B) as severance pay, twelve (12) months' worth of Executive's salary at the rate in effect on the termination date;

(C) 100% of any incentive cash and/or stock bonus opportunity for the current year;

(D) the amount equal to the cost of twelve (12) months' medical insurance premiums at a monthly amount equal to the amount of COBRA coverage in effect as of the termination date; and

(E) an additional tax gross up payment in an amount necessary so that the amount received by Executive to cover COBRA premiums under Section 5.d(ii)(D) after all applicable withholding tax is deducted (using applicable supplemental wage withholding rates) is the full amount Executive would have received under Section 5.d(ii)(D) if no tax withholding was made.

(iii) Executive shall only be entitled to such severance pay if, within thirty (30) days following the date of termination, both Employer and Executive have signed (and then Executive does not rescind, as may be permitted by law) a mutual general release of claims in a form mutually acceptable to both parties (provided, however, that

such release of claims shall only require each party to release the other party from claims relating directly to Executive's employment and the termination thereof, and shall not require Executive to release claims relating to vested employee benefits or relating to other matters, including, but not limited to, claims relating to Executive's status as a shareholder of the Company.

(iv) Upon termination of Executive's employment hereunder due to a Change in Control, including by Executive for Good Reason, all unvested stock options, awards, or other equity grants or awards shall immediately fully vest. Executive or Executive's estate (as the case may be) shall be entitled to receive any vested benefits required to be paid by law and any vested compensation required to be paid by law.

e. **No Fault Termination By Executive.** Executive may terminate Executive's employment under this Agreement for any reason provided that Executive gives Employer at least ninety (90) days' notice in writing. Employer may, at its option, accelerate such termination date to any date at least two weeks after Executive's notice of termination. Employer may also, at its option, relieve Executive of all duties and authority after notice of termination has been provided. Upon termination of Executive's employment in accordance with this Section, Company shall pay the Executive no later than fourteen (14) days from the termination date in a lump sum: (i) Executive's salary through the date of termination, (ii) for any unused vacation time, and (iii) for any unreimbursed business expenses that are subject to reimbursement under Employer's then current policy on business expenses. Such payments will be subject to all appropriate deductions and withholdings. Upon termination, Executive will have no rights to any unvested benefits or any other compensation.

f. **Termination By Executive for Good Reason.** Executive's employment pursuant to this Agreement shall terminate in the event Executive shall determine that there is "Good Reason" to terminate Executive's employment, which shall mean the following:

(i) Employer's material breach of the terms of this Agreement or any other written agreement between Executive and Employer; or

(ii) The occurrence of any of the following conditions, without Executive's consent:

(A) a significant diminution in the nature or scope of Executive's authority, title, function or duties;

(B) a ten percent (10%) reduction in Executive's base salary or a twenty-five percent (25%) reduction in Executive's target bonus

opportunity (unless such reduction is part of a Company officer-wide program to reduce expenses);

(C) the Company's requiring Executive to be based and work out of an office or location more than 50 miles from the office where Executive is currently employed;

(D) any material breach of the terms of this Agreement by the Company; or

(E) failure of any successor or assignee to the Company to assume this Agreement.

Provided that Executive has provided with notice of the existence of a condition giving rise to "Good Reason" to terminate within ninety (90) days following the initial existence of such a condition, Employer shall have thirty (30) days to cure any such alleged breach, assignment, reduction or requirement referenced above, after Executive provides Employer written notice of the actions or omissions constituting such breach, assignment, reduction or requirement.

If Executive resigns Executive's employment for Good Reason, Executive shall be paid no later than fourteen (14) days from the termination date in a lump sum:

I. (i) Executive's salary through the date of termination, (ii) for any unused vacation time, and (iii) for any unreimbursed business expenses that are subject to reimbursement under Employer's then current policy on business expenses.

II. severance pay of twelve (12) months' worth of Executive's salary at the rate in effect on the termination date.

III. the amount equal to the cost of twelve (12) months' medical insurance premiums at a monthly amount equal to the amount of COBRA coverage in effect as of the termination date; and

IV. an additional tax gross up payment in an amount necessary so that the amount received by Executive to cover COBRA premiums under Section 5.f(III) after all applicable withholding tax is deducted (using applicable supplemental wage withholding rates) is the full amount Executive would have received under Section 5.f(III) if no tax withholding was made.

Such payments will be subject to all appropriate deductions and withholdings. Upon termination of Executive's employment hereunder due to resignation for good reason, all unvested stock options, awards, or other equity grants or awards shall immediately fully vest. Executive or Executive's estate (as the case may be) shall be entitled to receive any

vested benefits required to be paid by law and any vested compensation required to be paid by law.

Executive shall only be entitled to such severance pay if, within thirty (30) days following the date of termination, both Employer and Executive have signed (and then Executive does not rescind, as may be permitted by law) a mutual general release of claims in a form mutually acceptable to both parties (provided, however, that such release of claims shall only require each party to release the other party from claims relating directly to Executive's employment and the termination thereof, and shall not require Executive to release claims relating to vested employee benefits or relating to other matters, including, but not limited to, claims relating to Executive's status as a shareholder of the Company.

6. **Return of Company Property.** Upon termination of this Agreement or upon request of the Company, Executive shall deliver to the Corporation all property, documents and materials pertaining to the Company's business including, but not limited to, memoranda, notes, records, drawings, manuals, disks, copies, representations, extracts, summaries and analyses, all inventory, demonstration units, and any other property, documents or media of the Corporation, and all equipment belonging to the company, including but not limited to corporate cards, access cards, office keys, office equipment, laptop and desktop computers, cell phones and other wireless devices, thumb drives, zip drives and all other media storage devices.

7. **Covenant Not To Compete.** During Executive's employment by Employer and for a period expiring one (1) year after the termination of Executive's employment for any reason, Executive covenants and agrees that Executive will not:

a. Directly, indirectly, or otherwise, own, manage, operate, control, serve as a consultant to, be employed by, participate in, or be connected, in any manner, with the ownership, management, operation or control of any business that competes with the Business or that competes with Employer or any of its affiliates or that is engaged in any type of business which, at any time during Executive's employment with Employer, Employer or any of its affiliates planned to develop;

b. Hire, offer to hire, entice away or in any other manner persuade or attempt to persuade any officer, employee or agent of Employer or any of its affiliates to alter or discontinue a relationship with Employer or to do any act that is inconsistent with the interests of Employer or any of its affiliates;

c. Directly or indirectly solicit, divert, take away or attempt to solicit, divert or take away any customers of Employer or any of its affiliates; or

d. Directly or indirectly solicit, divert, or in any other manner persuade or attempt to persuade any supplier of Employer or any of its affiliates to alter or discontinue its relationship with Employer or any of its affiliates.

For the purposes of this Section 7, businesses that are deemed to compete with Employer include, without limitation, businesses engaged in manufacturing and marketing biopreservation media for cells, tissues, and organs or cold chain management products and/or services. The geographic scope of the prohibitions in this Section 7 shall be any city, town or county in which the Company conducts or does any business as of or within one (1) year of Executive's last day of employment with the Company. Notwithstanding Executive's obligations under this Section 7, Executive will be entitled to own, as a passive investor, up to five percent (5%) of any publicly traded company without violating this provision.

Employer and Executive agree that: this provision does not impose an undue hardship on Executive and is not injurious to the public; that this provision is necessary to protect the business of Employer and its affiliates; the nature of Executive's responsibilities with Employer under this Agreement require Executive to have access to confidential information which is valuable and confidential to all of the Business; the scope of this Section 7 is reasonable in terms of length of time and geographic scope; and adequate consideration supports this Section 7, including consideration herein.

8. **Confidential Information.** Executive recognizes that Employer's business and continued success depend upon the use and protection of confidential and proprietary business information, including, without limitation, the information and technology developed by or available through licenses to Employer, to which Executive has access (all such information being "Confidential Information"). For purposes of this Agreement, the phrase "Confidential Information" includes, for Employer and its current or future subsidiaries and affiliates, without limitation, and whether or not specifically designated as confidential or proprietary: all business plans and marketing strategies; information concerning existing and prospective markets and customers; financial information; information concerning the development of new products and services; information concerning any personnel of Employer (including, without limitation, skills and compensation information); intellectual property; and technical and non-technical data related to software programs, designs, specifications, compilations, inventions, improvements, methods, processes, procedures and techniques; provided, however, that the phrase does not include information that (a) was lawfully in Executive's possession prior to disclosure of such information by Employer; (b) was, or at any time becomes, available in the public domain other than through a violation of this Agreement; (c) is documented by Executive as having been developed by Executive outside the scope of Executive's employment and independently; or (d) is furnished to Executive by a third party not under an obligation of confidentiality to Employer. Executive agrees that during Executive's employment and after termination of employment irrespective of cause, Executive will use Confidential Information only (i) while employed by the Company, in the business of and for the benefit of the Company, or (ii) when required to do so by a court of competent jurisdiction, by any governmental agency having supervisory authority over the business of the Company, or by any administrative body or legislative body (including a committee thereof) with jurisdiction to order Executive to divulge, disclose or make accessible such information, and then only after providing written notice to Employer that such a demand has been made. Executive's obligation under this Agreement is in addition to any

obligations Executive has under state or federal law. Executive agrees to deliver to Employer immediately upon termination of Executive's employment, or at any time Employer so requests, all tangible items containing any Confidential Information (including, without limitation, all memoranda, photographs, records, reports, manuals, drawings, blueprints, prototypes, notes taken by or provided to Executive, and any other documents or items of a confidential nature belonging to Employer), together with all copies of such material in Executive's possession or control. Executive agrees that in the course of Executive's employment with Employer, Executive will not violate in any way the rights that any entity has with regard to trade secrets or proprietary or confidential information. Executive's obligations under this Section 8 are indefinite in term and shall survive the termination of this Agreement.

9. **Work Product and Copyrights.** Executive agrees that all right, title and interest in and to the materials resulting from the performance of Executive's duties at Employer and all copies thereof, including works in progress, in whatever media, (the "Work"), will be and remain in Employer upon their creation. Executive will mark all Work with Employer's copyright or other proprietary notice as directed by Employer. Executive further agrees:

a. To the extent that any portion of the Work constitutes a work protectable under the copyright laws of the United States (the "Copyright Law"), that all such Work will be considered a "work made for hire" as such term is used and defined in the Copyright Law, and that Employer will be considered the "author" of such portion of the Work and the sole and exclusive owner throughout the world of copyright therein; and

b. If any portion of the Work does not qualify as a "work made for hire" as such term is used and defined in the Copyright Law, that Executive hereby assigns and agrees to assign to Employer, without further consideration, all right, title and interest in and to such Work or in any such portion thereof and any copyright therein and further agrees to execute and deliver to Employer, upon request, appropriate assignments of such Work and copyright therein and such other documents and instruments as Employer may request to fully and completely assign such Work and copyright therein to Employer, its successors or nominees, and that Executive hereby appoints Employer as attorney-in-fact to execute and deliver any such documents on Executive's behalf in the event Executive should fail or refuse to do so within a reasonable period following Employer's request.

10. **Inventions and Patents.** For purposes of this Agreement, "Inventions" includes, without limitation, information, inventions, contributions, improvements, ideas, or discoveries, whether protectable or not, and whether or not conceived or made during work hours. Executive agrees that all Inventions conceived or made by Executive during the period of employment with Employer belong to Employer, provided they grow out of Executive's work with Employer or are related in some manner to the Business, including, without limitation, research and product development, and projected business of Employer or its affiliated companies. Accordingly, Executive will:

a. Make adequate written records of such Inventions, which records will be Employer's property;

b. Assign to Employer, at its request, any rights Executive may have to such Inventions for the U.S. and all foreign countries;

c. Waive and agree not to assert any moral rights Executive may have or acquire in any Inventions and agree to provide written waivers from time to time as requested by Employer; and

d. Assist Employer (at Employer's expense) in obtaining and maintaining patents or copyright registrations with respect to such Inventions.

Executive understands and agrees that Employer or its designee will determine, in its sole and absolute discretion, whether an application for patent will be filed on any Invention that is the exclusive property of Employer, as set forth above, and whether such an application will be abandoned prior to issuance of a patent. Employer will pay to Executive, either during or after the term of this Agreement, the following amounts if Executive is sole inventor, or Executive's proportionate share if Executive is joint inventor: $750 upon filing of the initial application for patent on such Invention; and $1,500 upon issuance of a patent resulting from such initial patent application, provided Executive is named as an inventor in the patent.

Executive further agrees that Executive will promptly disclose in writing to Employer during the term of Executive's employment and for one (1) year thereafter, all Inventions whether developed during the time of such employment or thereafter (whether or not Employer has rights in such Inventions) so that Executive's rights and Employer's rights in such Inventions can be determined. Except as set forth on the initialed Exhibit B (List of Inventions) to this Agreement, if any, Executive represents and warrants that Executive has no Inventions, software, writings or other works of authorship useful to Employer in the normal course of the Business, which were conceived, made or written prior to the date of this Agreement and which are excluded from the operation of this Agreement.

NOTICE: In accordance with Washington law, this Section 10 does not apply to Inventions for which no equipment, supplies, facility, or trade secret information of Employer was used and which was developed entirely on Executive's own time, unless: (a) the Invention relates (i) directly to the business of Employer or (ii) to Employer's actual or demonstrably anticipated research or development, or (b) the Invention results from any work performed by Executive for Employer.

11. **Cooperation.** The parties agree that certain matters in which Executive will be involved during the Term may necessitate Executive's cooperation in the future. Accordingly, following the termination of Executive's employment for any reason, to the extent reasonably requested by the Board, Executive shall cooperate with the Employer in connection with matters arising out of Executive's service to the Employer; provided that, the Employer shall make reasonable efforts to minimize disruption of Executive's other

activities. The Employer shall reimburse Executive for reasonable expenses incurred in connection with such cooperation.

12. **Non-Disparagement.** Executive agrees and covenants that Executive will not at any time make, publish or communicate to any person or entity or in any public forum any defamatory or disparaging remarks, comments, or statements concerning the Employer or its businesses, or any of its employees, officers, and existing and prospective customers, suppliers, investors and other associated third parties. This Section 12 does not, in any way, restrict or impede Executive from exercising protected rights to the extent that such rights cannot be waived by agreement or from complying with any applicable law or regulation or a valid order of a court of competent jurisdiction or an authorized government agency, provided that such compliance does not exceed that required by the law, regulation, or order. The Executive shall promptly provide written notice of any such order to the Chief Financial Officer.

13. **Remedies.** Notwithstanding other provisions of this Agreement regarding dispute resolution, Executive agrees that Executive's violation of any of Sections 7, 8, 9, 10, 11 or 12 of this Agreement would cause Employer irreparable harm which would not be adequately compensated by monetary damages and that an injunction may be granted by any court or courts having jurisdiction, restraining Executive from violation of the terms of this Agreement, upon any breach or threatened breach of Executive of the obligations set forth in any of Sections 7, 8, 9, 10, 11 or 12. The preceding sentence shall not be construed to limit Employer from any other relief or damages to which it may be entitled as a result of Executive's breach of any provision of this Agreement, including Sections 7, 8, 9, 10, 11 or 12. Executive also agrees that a violation of any of Sections 7, 8, 9, 10, 11 or 12 would entitle Employer, in addition to all other remedies available at law or equity, to recover from Executive any and all funds, including, without limitation, wages, salary and profits, which will be held by Executive in constructive trust for Employer, received by Executive in connection with such violation.

14. **Dispute Resolution.** Except for the right of Employer and Executive to seek injunctive relief in court, any controversy, claim or dispute of any type arising out of or relating to Executive's employment or the provisions of this Agreement shall be resolved in accordance with this Section 14 regarding resolution of disputes, which will be the sole and exclusive procedure for the resolution of any disputes. This Agreement shall be enforced in accordance with the Federal Arbitration Act, the enforcement provisions of which are incorporated by this reference. Matters subject to these provisions include, without limitation, claims or disputes based on statute, contract, common law and tort and will include, for example, matters pertaining to termination, discrimination, harassment, compensation and benefits. Matters to be resolved under these procedures also include claims and disputes arising out of statutes such as the Fair Labor Standards Act, Title VII of the Civil Rights Act, the Age Discrimination in Employment Act, the Washington Minimum Wage Act, and the Washington Law Against Discrimination. Nothing in this provision is intended to restrict Executive from submitting any matter to an administrative agency with jurisdiction over such matter.

a. **Mediation.** Employer and Executive will make a good faith attempt to resolve any and all claims and disputes by submitting them to mediation in Snohomish County, Washington before resorting to arbitration or any other dispute resolution procedure. The mediation of any claim or dispute must be conducted in accordance with the then-current JAMS procedures for the resolution of employment disputes by mediation, by a mediator who has had both training and experience as a mediator of general employment and commercial matters. If the parties to this Agreement cannot agree on a mediator, then the mediator will be selected by JAMS in accordance with JAMS' strike list method. Within thirty (30) days after the selection of the mediator, Employer and Executive and their respective attorneys will meet with the mediator for one mediation session of at least four hours. If the claim or dispute cannot be settled during such mediation session or mutually agreed continuation of the session, either Employer or Executive may give the mediator and the other party to the claim or dispute written notice declaring the end of the mediation process. All discussions connected with this mediation provision will be confidential and treated as compromise and settlement discussions. Nothing disclosed in such discussions, which is not independently discoverable, may be used for any purpose in any later proceeding. The mediator's fees will be paid in equal portions by Employer and Executive, unless Employer agrees to pay all such fees.

b. **Arbitration.** If any claim or dispute has not been resolved in accordance with Section 14.a., then the claim or dispute will be determined by arbitration in accordance with the then-current JAMS employment arbitration rules and procedures, except as modified herein. The arbitration will be conducted by a sole neutral arbitrator who has had both training and experience as an arbitrator of general employment and commercial matters and who is and for at least ten (10) years has been, a partner, a shareholder, or a member in a law firm. The arbitration shall be held in Snohomish County, Washington. If Employer and Executive cannot agree on an arbitrator, then the arbitrator will be selected by JAMS in accordance with Rule 15 of the JAMS employment arbitration rules and procedures. No person who has served as a mediator under the mediation provision, however, may be selected as the arbitrator for the same claim or dispute. Reasonable discovery will be permitted and the arbitrator may decide any issue as to discovery. The arbitrator may decide any issue as to whether or as to the extent to which any dispute is subject to the dispute resolution provisions in Section 14 and the arbitrator may award any relief permitted by law. The arbitrator must base the arbitration award on the provisions of Section 14 and applicable law and must render the award in writing, including an explanation of the reasons for the award. Judgment upon the award may be entered by any court having jurisdiction of the matter, and the decision of the arbitrator will be final and binding. The statute of limitations applicable to the commencement of a lawsuit will apply to the commencement of an arbitration under Section 14.b. The arbitrator's fees will be paid in equal portions by Employer and Executive, unless Employer agrees to pay all such fees.

15. **Fees Related to Dispute Resolution.** Unless otherwise agreed, the prevailing party will be entitled to its costs and attorneys' fees incurred in any litigation or dispute relating to the interpretation or enforcement of this Agreement.

16. **409A**. It is intended that any payment or benefit that is provided pursuant to or in connection with this Agreement that is considered to be deferred compensation subject to Section 409A of the Internal Revenue Code of 1986, as amended ("Code") shall be paid and provided in a manner, and at such time and form, as complies with the applicable requirements of Section 409A of the Code to avoid the unfavorable tax consequences provided therein for non-compliance. It is further intended that the payments hereunder shall, to the maximum extent permissible under Section 409A of the Code, be exempt from Section 409A of the Code under either (i) the exception for involuntary separation pay to the extent that all payments are payable within the limitations described in Treasury Regulation Section 1.409A-1(b)(9), or (ii) the short-term deferral exception described in Treasury Regulation Section 1.409A-1(b)(4) to the extent that all payments are payable no later than two and a half months after the end of the first taxable year in which the right to the payment is no longer subject to a substantial risk of forfeiture.

a. If the Executive is a "specified employee" for purposes of Section 409A(a)(2)(B)(i) of the Code at such time, any payments to be made or benefits to be delivered in connection with the Executive's "Separation from Service" (as defined below) that constitute deferred compensation subject to Section 409A of the Code shall not be made until six months plus one day after the Executive's Separation from Service (the "409A Deferral Period") as required by Section 409A of the Code, provided that the payment of any such deferred compensation may be paid immediately following the Executive's death. Payments of any such deferred compensation otherwise due to be made in installments or periodically during the 409A Deferral Period shall be accumulated and paid in a lump sum as soon as the 409A Deferral Period ends, and the balance of the payment shall be made as otherwise scheduled.

b. For purposes of this Agreement, all rights to payments and benefits hereunder shall be treated as rights to receive a series of separate payments and benefits to the fullest extent allowed by Section 409A of the Code.

c. For purposes of this Agreement, with respect to the timing of any amounts that constitute deferred compensation subject to Section 409A of the Code that depends on termination of employment or separation from service, termination of employment or separation from service shall mean a "separation from service" within the meaning of Section 409A of the Code where it is reasonably anticipated that no further services would be performed after such date or that the level of bona fide services the Executive would perform after that date (whether as an employee or independent contractor) would permanently decrease to a level less than or equal to twenty percent (20%) of the average level of bona fide services the Executive performed over the immediately preceding thirty-six (36) month period.

17. **Disclosure.** Executive agrees fully and completely to reveal the terms of this Agreement to any future employer or potential employer of Executive and authorizes Employer, at its election, to make such disclosure.

18. **Representation of Executive.** Executive represents and warrants to Employer that Executive is free to enter into this Agreement and has no contract, commitment, arrangement or understanding to or with any party that restrains or is in conflict with Executive's performance of the covenants, services and duties provided for in this Agreement, and is not contravene the terms of any statute, law, or regulation to which Executive is subject. Executive agrees to indemnify Employer and to hold it harmless against any and all liabilities or claims arising out of any unauthorized act or acts by Executive that, the foregoing representation and warranty to the contrary notwithstanding, are in violation, or constitute a breach, of any such contract, commitment, arrangement or understanding.

19. **Conditions of Employment.** Employer's obligations to Executive under this Agreement are conditioned upon Executive's timely compliance with requirements of the United States immigration laws.

20. **Assignability.** This Agreement shall not be assignable by Executive. This Agreement may be assigned by the Company to a company which is a successor in interest to substantially all of the business operations of the Company. Such assignment shall become effective when the Company notifies the Executive of such assignment or at such later date as may be specified in such notice. Upon such assignment, the rights and obligations of the Company hereunder shall become the rights and obligations of such successor company, provided that any assignee expressly assumes the obligations, rights and privileges of this Agreement.

21. **Notices.** Any notices required or permitted to be given hereunder are sufficient if in writing and delivered by hand, by facsimile, by registered or certified mail, postage prepaid, or by overnight courier, to Executive at Executive's home address as most recently updated in Executive's Human Resources records, or to BioLife Solutions, Inc., 3303 Monte Villa Parkway, #310, Bothell, WA 98021, Attention: Chief Executive Officer. Notices shall be deemed to have been given (i) upon delivery, if delivered by hand or by email, (ii) seven days after mailing, if mailed, (iii) one business day after delivery, if delivered by courier, and (iv) one business day following receipt of an appropriate electronic confirmation, if by facsimile.

22. **Severability**. If any provision of this Agreement or compliance by any of the parties with any provision of this Agreement constitutes a violation of any law, or is or becomes unenforceable or void, then such provision, to the extent only that it is in violation of law, unenforceable or void, shall be deemed modified to the extent necessary so that it is no longer in violation of law, unenforceable or void, and such provision will be enforced to the fullest extent permitted by law. The Parties shall engage in good faith negotiations to modify and replace any provision which is declared invalid or unenforceable with a valid and enforceable provision, the economic effect of which comes as close as possible to that

of the invalid or unenforceable provision which it replaces. If such modification is not possible, said provision, to the extent that it is in violation of law, unenforceable or void, shall be deemed severable from the remaining provisions of this Agreement, which provisions will remain binding on the parties.

23. **Waivers**. No failure on the part of either party to exercise, and no delay in exercising, any right or remedy hereunder will operate as a waiver thereof; nor will any single or partial waiver of a breach of any provision of this Agreement operate or be construed as a waiver of any subsequent breach; nor will any single or partial exercise of any right or remedy hereunder preclude any other or further exercise thereof or the exercise of any other right or remedy granted hereby or by law.

24. **Governing Law.** Except as provided in Section 14 above, the validity, construction and performance of this Agreement shall be governed by the laws of the State of Washington without regard to the conflicts of law provisions of such laws. The parties hereto expressly recognize and agree that the implementation of this Section 24 is essential in light of the fact that Employer has its corporate headquarters and its principal executive offices within the State of Washington, and there is a critical need for uniformity in the interpretation and enforcement of the employment agreements between Employer and its key employees. Aside from any disputes that must be resolved by arbitration as provided for in Section 14, the Snohomish County Superior Court in Washington shall have exclusive jurisdiction of any lawsuit arising from or relating to Executive's employment with, or termination from, Employer, or arising from or relating to this Agreement. Executive consents to such venue and personal jurisdiction.

25. **Counterparts.** This agreement may be executed in counterpart in different places, at different times and on different dates, and in that case all executed counterparts taken together collectively constitute a single binding agreement.

26. **Costs and Fees Related to Negotiation and Execution of Agreement.** Each Party Shall be responsible for the payment of its own costs and expenses, including legal fees and expenses, in connection with the negotiation and execution of this Agreement. Neither Party will be liable for the payment of any commissions or compensation in the nature of finders' fees or brokers' fees, gratuity or other similar thing or amount in consideration of the other Party entering into this Agreement to any broker, agent or third party acting on behalf of the other Party.

27. **Entire Agreement.** This instrument contains the entire agreement of the parties with respect to the relationship between Executive and Employer and supersedes all prior agreements and understandings, and there are no other representations or agreements other than as stated in this Agreement related to the terms and conditions of Executive's employment. This Agreement may be changed only by an agreement in writing signed by the party against whom enforcement of any waiver, change, modification, extension or discharge is sought, and any such modification will be signed by an authorized representative of Employer.

IN WITNESS WHEREOF, the parties have duly signed and delivered this Agreement as of the day and year first above written.

EMPLOYER

By:_____
Title: Chief Executive Officer

EXECUTIVE

_____

Todd Berard

EXHIBIT A

DISCLOSURE OF OUTSIDE BOARD OF DIRECTORS AND TRUSTEE POSITIONS

EXHIBIT B

LIST OF INVENTIONS

AMENDED AND RESTATED EXECUTIVE EMPLOYMENT AGREEMENT

THIS AMENDED AND RESTATED EXECUTIVE EMPLOYMENT AGREEMENT (this "Agreement") is made between BioLife Solutions Inc., a Delaware corporation ("Employer" or the "Company"), and Karen Foster ("Executive"). Executive and the Company are sometimes referred to herein as the "Parties". The effective date of this Agreement is June 1, 2023. This Agreement supersedes and replaces all prior employment agreements (and any amendments thereto) between the Company and Executive, including, for the avoidance of doubt, the employment agreement between the Parties that became effective on December 1, 2020 and any amendments thereto.

RECITALS

A. Employer is in the business (the "Business") of manufacturing and marketing biopreservation media and cold chain products for cells, tissues, and organs.

B. Employer desires to obtain the services of Executive, in which capacity Executive has access to Employer's Confidential Information (as hereinafter defined), and to obtain assurance that Executive will protect Employer's Confidential Information and will not compete with Employer or solicit its customers or its other employees during the term of employment and for a reasonable period of time after termination of employment pursuant to this Agreement, and Executive is willing to agree to these terms.

C. Executive desires to be assured of the salary and other benefits provided for in this Agreement.

AGREEMENT

NOW, THEREFORE, in consideration of the mutual covenants herein contained, and other good and valuable consideration, the sufficiency and receipt of which are hereby acknowledged, the parties agree as follows:

1. **Employment**.

a. Employer hereby employs Executive, and Executive agrees to be employed as Senior Vice President and Chief Quality Officer ("CQO"), in accordance with the terms and conditions set forth in this Agreement. Changes may be made from time to time by Employer and/or the Board in its sole discretion to the duties, authorities, reporting relationships and title of Executive.

b. Executive will devote full time, attention, and best efforts to achieving the purposes and discharging the responsibilities of the CQO. Executive will comply with all rules, policies and procedures of Employer as modified from time to time, including without limitation, rules and procedures set forth in the

Employer's employee handbook, supervisor's manuals and operating manuals. Executive will perform all of Executive's responsibilities in compliance with all applicable laws and will ensure that the operations that Executive manages are in compliance with all applicable laws. During Executive's employment, Executive will not engage in any other business activity which, in the reasonable judgment of the Employer, conflicts with the duties of Executive under this Agreement, whether or not such activity is pursued for gain, profit or other pecuniary advantage.

c. Nothing herein shall preclude Executive from: (1) continuing to serve on the board of directors or trustees of any business corporation or any charitable organization on which Executive currently serves and which is identified on Exhibit A hereto, or (2) subject to the prior approval of the Board, appointment to any additional directorships or trusteeships, or (3) serving in an advisory role for other business entities, provided in each case, and in the aggregate, that such activities do not interfere with the performance of Executive's duties hereunder or conflict with Section 7 of this Agreement.

2. **Term of Employment**. The term of employment ("Term") will not be for a definite period, but rather continue indefinitely until terminated in accordance with the terms and conditions of this Agreement.

3. **Compensation.** For the duration of Executive's employment hereunder, the Executive will be entitled to compensation which will be computed and paid pursuant to the following subparagraphs.

a. **Base Salary.** Employer will pay to Executive a base salary ("Base Salary") at an annual rate of three hundred eighty-two thousand Dollars ($382,000), payable in such installments (but in no event less than monthly), subject to withholdings and deductions as required or permitted by law, as is Employer's policy with respect to other employees. Executive's Base Salary will be reviewed periodically by the Board of Directors of Employer during the term of Executive's employment and may be adjusted in the sole discretion of the Board of Directors based on such review, but will not be reduced by Employer unless a material adverse change in the financial condition or operations of Employer has occurred or unless Executive's responsibilities are altered to reflect less responsibility.

b. **Performance Bonus.** Employer under direction of its Board may pay or cause to be paid to Executive such Bonus as it from time to time determines appropriate.

4. **Other Benefits**.

a. **Certain Benefits.** Executive will be eligible to participate in all employee benefit programs established by Employer that are applicable to management personnel such as medical, pension, disability and life insurance plans on a basis

commensurate with Executive's position and in accordance with Employer's policies from time to time, but nothing herein shall require the adoption or maintenance of any such plan.

b. **Vacations, Holidays and Expenses.** Executive will be provided accrued paid vacation of three (3) weeks each calendar year, which shall be the maximum number of days Executive may accrue at any time, and which shall be taken at such times as are consistent with Executive's responsibilities hereunder. Executive will be provided such holidays and vacation as Executive makes available to its management level employees generally. Employer will reimburse Executive in accordance with company policies and procedures for reasonable expenses necessarily incurred in the performance of duties hereunder against appropriate receipts and vouchers indicating the specific business purpose for each such expenditure. In no case shall any reimbursement be made later than December 31st of the year following the calendar year in which such expense is incurred.

c. **Right of Set-off.** By accepting this Agreement, Executive consents to a deduction from any amounts Employer owes Executive from time to time (including amounts owed to Executive as wages or other compensation, fringe benefits, or vacation pay, as well as any other amounts owed to Executive by Employer), to the extent of the amounts Executive owes to Employer. Whether or not Employer elects to make any set-off in whole or in part, if Employer does not recover by means of set-off the full amount Executive owes it, calculated as set forth above, Executive agrees to pay immediately the unpaid balance to Employer.

5. **Termination, Discharge**.

a. **For Cause.** Employer will have the right to immediately terminate Executive's services and this Agreement for Cause. "Cause" means the Employer's belief that any of the following has occurred:

(i) any breach of this Agreement by Executive, including, without limitation, breach of Executive's covenants in Sections 7, 8, 9, 10, 11 or 12;

(ii) any failure to perform assigned job responsibilities that continues unremedied for a period of ten (10) days after written notice to Executive by Employer;

(iii) Executive's malfeasance or misconduct in connection with Executive's duties hereunder or any act or omission of Executive which is materially injurious to the financial condition or business reputation of the Company or any of its subsidiaries or affiliates,

(iv) commission or conviction of a felony or misdemeanor (other than a misdemeanor traffic violation), including a plea of guilty or failure to contest prosecution for a felony or misdemeanor;

(v) the Employer's reasonable belief that Executive engaged in a violation of any statute, rule or regulation, any of which in the judgment of Employer is harmful to the Business or to Employer's reputation;

(vi) the Employer's reasonable belief that Executive engaged in unethical practices, dishonesty or disloyalty, unless Executive has evidence establishing that Employer directed Executive to commit such practice or act;

(vii) or any reason that would constitute Cause under the laws the State of Washington.

Upon termination of Executive's employment hereunder for Cause, the Company shall pay the Executive no later than fourteen (14) days from the termination date in a lump sum: (x) Executive's salary through the date of termination, (y) for any unused vacation time, and (z) for any unreimbursed business expenses that are subject to reimbursement under Employer's then current policy on business expenses. Executive will have no rights to any unvested benefits or any other compensation or payments after the termination date.

b. **Due to Death or Disability.** Employer will have the right to immediately terminate Executive's services and this Agreement due to death or disability. For purposes of this Agreement, "disability" means the incapacity or inability of Executive, whether due to accident, sickness or otherwise, as determined by a medical doctor acceptable to the Board of Directors of Employer and confirmed in writing by such doctor, to perform the essential functions of Executive's position under this Agreement, with or without reasonable accommodation (provided that no accommodation that imposes undue hardship on Employer will be required) for a period of sixty (60) consecutive days or for an aggregate of ninety (90) days during any period of twelve (12) months, or such longer period as may be required under disability law.

Upon termination of Executive's employment hereunder due to death or disability, the Company shall pay the Executive no later than fourteen (14) days from the termination date in a lump sum: (i) Executive's salary through the date of termination, (ii) a prorated portion of any incentive bonus opportunity previously approved by the Board, (iii) for any unused vacation time, and (iv) for any unreimbursed business expenses that are subject to reimbursement under Employer's then current policy on business expenses. Upon termination of Executive's employment hereunder due to death or disability, all unvested stock

options, awards, or other equity grants or awards shall immediately fully vest for the benefit of Executive's estate. Executive or Executive's estate (as the case may be) shall be entitled to receive any vested benefits required to be paid by law and any vested compensation required to be paid by law.

c. **Without Cause.** Employer may terminate Executive's employment under this Agreement without cause and without advance notice; provided, however, that Employer will pay (unless subparagraph 5.d of this Agreement applies, in which case the provisions therein shall govern), no later than fourteen (14) days from the termination date in a lump sum:

(i) (x) Executive's salary through the date of termination, (y) for any unused vacation time, and (z) for any unreimbursed business expenses that are subject to reimbursement under Employer's then current policy on business expenses.

(ii) severance pay of twelve (12) months' worth of Executive's salary at the rate in effect on the termination date.

(iii) the amount equal to the cost of twelve (12) months' medical insurance premiums at a monthly amount equal to the amount of COBRA coverage in effect as of the termination date; and

(iv) an additional tax gross up payment in an amount necessary so that the amount received by Executive to cover COBRA premiums under Section 5.c(iii) after all applicable withholding tax is deducted (using applicable supplemental wage withholding rates) is the full amount Executive would have received under Section 5.c(iii) if no tax withholding was made.

Such payments will be subject to all appropriate deductions and withholdings. Upon termination of Executive's employment hereunder due to termination without cause, all unvested stock options, awards, or other equity grants or awards shall immediately fully vest. Executive or Executive's estate (as the case may be) shall be entitled to receive any vested benefits required to be paid by law and any vested compensation required to be paid by law.

Executive shall only be entitled to such severance pay if, within thirty (30) days following the date of termination, both Employer and Executive have signed (and then Executive does not rescind, as may be permitted by law) a mutual general release of claims in a form mutually acceptable to both parties (provided, however, that such release of claims shall only require each party to release the other party from claims relating directly to Executive's employment and the termination thereof, and shall not require Executive to release claims relating to vested

employee benefits or relating to other matters, including, but not limited to, claims relating to Executive's status as a shareholder of the Company.

d. **Change in Control**.

(i) For purposes of this Agreement, Change in Control shall mean (x) the consummation of a merger or consolidation of the Company with or into another entity, (y) the dissolution, liquidation or winding up of the Company or (z) the sale of all or substantially all of the Company's assets. The foregoing notwithstanding, a merger or consolidation of the Company shall not constitute a "Change in Control" if immediately after such merger or consolidation a majority of the voting power of the capital stock of the continuing or surviving entity, or any direct or indirect parent corporation of such continuing or surviving entity, will be owned by the persons who were the Company's stockholders immediately prior to such merger or consolidation in substantially the same proportions as their ownership of the voting power of the Company's capital stock immediately prior to such merger or consolidation.

(ii) Employer may terminate Executive's employment under this Agreement or Executive may resign for Good Reason upon or within 12 months following a Change in Control without advance notice; provided, however, that Employer will pay, no later than sixty (60) days from the termination date in a lump sum:

(A) (i) Executive's salary through the date of termination, (ii) for any unused vacation time, and (iii) for any unreimbursed business expenses that are subject to reimbursement under Employer's then current policy on business expenses;

(B) as severance pay, twelve (12) months' worth of Executive's salary at the rate in effect on the termination date;

(C) 100% of any incentive cash and/or stock bonus opportunity for the current year;

(D) the amount equal to the cost of twelve (12) months' medical insurance premiums at a monthly amount equal to the amount of COBRA coverage in effect as of the termination date; and

(E) an additional tax gross up payment in an amount necessary so that the amount received by Executive to cover COBRA premiums under Section 5.d(ii)(D) after all applicable withholding tax is deducted (using applicable supplemental wage withholding rates) is

the full amount Executive would have received under Section 5.d(ii)(D) if no tax withholding was made.

(iii) Executive shall only be entitled to such severance pay if, within thirty (30) days following the date of termination, both Employer and Executive have signed (and then Executive does not rescind, as may be permitted by law) a mutual general release of claims in a form mutually acceptable to both parties (provided, however, that such release of claims shall only require each party to release the other party from claims relating directly to Executive's employment and the termination thereof, and shall not require Executive to release claims relating to vested employee benefits or relating to other matters, including, but not limited to, claims relating to Executive's status as a shareholder of the Company.

(iv) Upon termination of Executive's employment hereunder due to a Change in Control, including by Executive for Good Reason, all unvested stock options, awards, or other equity grants or awards shall immediately fully vest. Executive or Executive's estate (as the case may be) shall be entitled to receive any vested benefits required to be paid by law and any vested compensation required to be paid by law.

e. **No Fault Termination By Executive.** Executive may terminate Executive's employment under this Agreement for any reason provided that Executive gives Employer at least ninety (90) days' notice in writing. Employer may, at its option, accelerate such termination date to any date at least two weeks after Executive's notice of termination. Employer may also, at its option, relieve Executive of all duties and authority after notice of termination has been provided. Upon termination of Executive's employment in accordance with this Section, Company shall pay the Executive no later than fourteen (14) days from the termination date in a lump sum: (i) Executive's salary through the date of termination, (ii) for any unused vacation time, and (iii) for any unreimbursed business expenses that are subject to reimbursement under Employer's then current policy on business expenses. Such payments will be subject to all appropriate deductions and withholdings. Upon termination, Executive will have no rights to any unvested benefits or any other compensation.

f. **Termination By Executive for Good Reason.** Executive's employment pursuant to this Agreement shall terminate in the event Executive shall determine that there is "Good Reason" to terminate Executive's employment, which shall mean the following:

(i) Employer's material breach of the terms of this Agreement or any other written agreement between Executive and Employer; or

(ii) The occurrence of any of the following conditions, without Executive's consent:

(A) a significant diminution in the nature or scope of Executive's authority, title, function or duties;

(B) a ten percent (10%) reduction in Executive's base salary or a twenty-five percent (25%) reduction in Executive's target bonus opportunity (unless such reduction is part of a Company officer-wide program to reduce expenses);

(C) the Company's requiring Executive to be based and work out of an office or location more than 50 miles from the office where Executive is currently employed;

(D) any material breach of the terms of this Agreement by the Company; or

(E) failure of any successor or assignee to the Company to assume this Agreement.

Provided that Executive has provided with notice of the existence of a condition giving rise to "Good Reason" to terminate within ninety (90) days following the initial existence of such a condition, Employer shall have thirty (30) days to cure any such alleged breach, assignment, reduction or requirement referenced above, after Executive provides Employer written notice of the actions or omissions constituting such breach, assignment, reduction or requirement.

If Executive resigns Executive's employment for Good Reason, Executive shall be paid no later than fourteen (14) days from the termination date in a lump sum:

I. (i) Executive's salary through the date of termination, (ii) for any unused vacation time, and (iii) for any unreimbursed business expenses that are subject to reimbursement under Employer's then current policy on business expenses.

II. severance pay of twelve (12) months' worth of Executive's salary at the rate in effect on the termination date.

III. the amount equal to the cost of twelve (12) months' medical insurance premiums at a monthly amount equal to the amount of COBRA coverage in effect as of the termination date; and

IV. an additional tax gross up payment in an amount necessary so that the amount received by Executive to cover COBRA premiums under Section 5.f(III) after all applicable withholding tax is deducted (using applicable supplemental wage withholding rates) is the full amount Executive would have received under Section 5.f(III) if no tax withholding was made.

Such payments will be subject to all appropriate deductions and withholdings. Upon termination of Executive's employment hereunder due to resignation for good reason, all unvested stock options, awards, or other equity grants or awards shall immediately fully vest. Executive or Executive's estate (as the case may be) shall be entitled to receive any vested benefits required to be paid by law and any vested compensation required to be paid by law.

Executive shall only be entitled to such severance pay if, within thirty (30) days following the date of termination, both Employer and Executive have signed (and then Executive does not rescind, as may be permitted by law) a mutual general release of claims in a form mutually acceptable to both parties (provided, however, that such release of claims shall only require each party to release the other party from claims relating directly to Executive's employment and the termination thereof, and shall not require Executive to release claims relating to vested employee benefits or relating to other matters, including, but not limited to, claims relating to Executive's status as a shareholder of the Company.

6. **Return of Company Property.** Upon termination of this Agreement or upon request of the Company, Executive shall deliver to the Corporation all property, documents and materials pertaining to the Company's business including, but not limited to, memoranda, notes, records, drawings, manuals, disks, copies, representations, extracts, summaries and analyses, all inventory, demonstration units, and any other property, documents or media of the Corporation, and all equipment belonging to the company, including but not limited to corporate cards, access cards, office keys, office equipment, laptop and desktop computers, cell phones and other wireless devices, thumb drives, zip drives and all other media storage devices.

7. **Covenant Not To Compete.** During Executive's employment by Employer and for a period expiring one (1) year after the termination of Executive's employment for any reason, Executive covenants and agrees that Executive will not:

a. Directly, indirectly, or otherwise, own, manage, operate, control, serve as a consultant to, be employed by, participate in, or be connected, in any manner, with the ownership, management, operation or control of any business that competes with the Business or that competes with Employer or any of its affiliates or that is engaged in any type of business which, at any time during Executive's employment with Employer, Employer or any of its affiliates planned to develop;

b. Hire, offer to hire, entice away or in any other manner persuade or attempt to persuade any officer, employee or agent of Employer or any of its affiliates to alter or discontinue a relationship with Employer or to do any act that is inconsistent with the interests of Employer or any of its affiliates;

c. Directly or indirectly solicit, divert, take away or attempt to solicit, divert or take away any customers of Employer or any of its affiliates; or

d. Directly or indirectly solicit, divert, or in any other manner persuade or attempt to persuade any supplier of Employer or any of its affiliates to alter or discontinue its relationship with Employer or any of its affiliates.

For the purposes of this Section 7, businesses that are deemed to compete with Employer include, without limitation, businesses engaged in manufacturing and marketing biopreservation media for cells, tissues, and organs or cold chain management products and/or services. The geographic scope of the prohibitions in this Section 7 shall be any city, town or county in which the Company conducts or does any business as of or within one (1) year of Executive's last day of employment with the Company. Notwithstanding Executive's obligations under this Section 7, Executive will be entitled to own, as a passive investor, up to five percent (5%) of any publicly traded company without violating this provision.

Employer and Executive agree that: this provision does not impose an undue hardship on Executive and is not injurious to the public; that this provision is necessary to protect the business of Employer and its affiliates; the nature of Executive's responsibilities with Employer under this Agreement require Executive to have access to confidential information which is valuable and confidential to all of the Business; the scope of this Section 7 is reasonable in terms of length of time and geographic scope; and adequate consideration supports this Section 7, including consideration herein.

8. **Confidential Information.** Executive recognizes that Employer's business and continued success depend upon the use and protection of confidential and proprietary business information, including, without limitation, the information and technology developed by or available through licenses to Employer, to which Executive has access (all such information being "Confidential Information"). For purposes of this Agreement, the phrase "Confidential Information" includes, for Employer and its current or future subsidiaries and affiliates, without limitation, and whether or not specifically designated as confidential or proprietary: all business plans and marketing strategies; information concerning existing and prospective markets and customers; financial information; information concerning the development of new products and services; information concerning any personnel of Employer (including, without limitation, skills and compensation information); intellectual property; and technical and non-technical data related to software programs, designs, specifications, compilations, inventions, improvements, methods, processes, procedures and techniques; provided, however, that the phrase does not include information that (a) was lawfully in Executive's possession prior

to disclosure of such information by Employer; (b) was, or at any time becomes, available in the public domain other than through a violation of this Agreement; (c) is documented by Executive as having been developed by Executive outside the scope of Executive's employment and independently; or (d) is furnished to Executive by a third party not under an obligation of confidentiality to Employer. Executive agrees that during Executive's employment and after termination of employment irrespective of cause, Executive will use Confidential Information only (i) while employed by the Company, in the business of and for the benefit of the Company, or (ii) when required to do so by a court of competent jurisdiction, by any governmental agency having supervisory authority over the business of the Company, or by any administrative body or legislative body (including a committee thereof) with jurisdiction to order Executive to divulge, disclose or make accessible such information, and then only after providing written notice to Employer that such a demand has been made. Executive's obligation under this Agreement is in addition to any obligations Executive has under state or federal law. Executive agrees to deliver to Employer immediately upon termination of Executive's employment, or at any time Employer so requests, all tangible items containing any Confidential Information (including, without limitation, all memoranda, photographs, records, reports, manuals, drawings, blueprints, prototypes, notes taken by or provided to Executive, and any other documents or items of a confidential nature belonging to Employer), together with all copies of such material in Executive's possession or control. Executive agrees that in the course of Executive's employment with Employer, Executive will not violate in any way the rights that any entity has with regard to trade secrets or proprietary or confidential information. Executive's obligations under this Section 8 are indefinite in term and shall survive the termination of this Agreement.

9. **Work Product and Copyrights.** Executive agrees that all right, title and interest in and to the materials resulting from the performance of Executive's duties at Employer and all copies thereof, including works in progress, in whatever media, (the "Work"), will be and remain in Employer upon their creation. Executive will mark all Work with Employer's copyright or other proprietary notice as directed by Employer. Executive further agrees:

a. To the extent that any portion of the Work constitutes a work protectable under the copyright laws of the United States (the "Copyright Law"), that all such Work will be considered a "work made for hire" as such term is used and defined in the Copyright Law, and that Employer will be considered the "author" of such portion of the Work and the sole and exclusive owner throughout the world of copyright therein; and

b. If any portion of the Work does not qualify as a "work made for hire" as such term is used and defined in the Copyright Law, that Executive hereby assigns and agrees to assign to Employer, without further consideration, all right, title and interest in and to such Work or in any such portion thereof and any copyright therein and further agrees to execute and deliver to Employer, upon request, appropriate assignments of such Work and copyright therein and such other documents and instruments as Employer may request to fully and completely assign such Work

and copyright therein to Employer, its successors or nominees, and that Executive hereby appoints Employer as attorney-in-fact to execute and deliver any such documents on Executive's behalf in the event Executive should fail or refuse to do so within a reasonable period following Employer's request.

10. **Inventions and Patents.** For purposes of this Agreement, "Inventions" includes, without limitation, information, inventions, contributions, improvements, ideas, or discoveries, whether protectable or not, and whether or not conceived or made during work hours. Executive agrees that all Inventions conceived or made by Executive during the period of employment with Employer belong to Employer, provided they grow out of Executive's work with Employer or are related in some manner to the Business, including, without limitation, research and product development, and projected business of Employer or its affiliated companies. Accordingly, Executive will:

a. Make adequate written records of such Inventions, which records will be Employer's property;

b. Assign to Employer, at its request, any rights Executive may have to such Inventions for the U.S. and all foreign countries;

c. Waive and agree not to assert any moral rights Executive may have or acquire in any Inventions and agree to provide written waivers from time to time as requested by Employer; and

d. Assist Employer (at Employer's expense) in obtaining and maintaining patents or copyright registrations with respect to such Inventions.

Executive understands and agrees that Employer or its designee will determine, in its sole and absolute discretion, whether an application for patent will be filed on any Invention that is the exclusive property of Employer, as set forth above, and whether such an application will be abandoned prior to issuance of a patent. Employer will pay to Executive, either during or after the term of this Agreement, the following amounts if Executive is sole inventor, or Executive's proportionate share if Executive is joint inventor: $750 upon filing of the initial application for patent on such Invention; and $1,500 upon issuance of a patent resulting from such initial patent application, provided Executive is named as an inventor in the patent.

Executive further agrees that Executive will promptly disclose in writing to Employer during the term of Executive's employment and for one (1) year thereafter, all Inventions whether developed during the time of such employment or thereafter (whether or not Employer has rights in such Inventions) so that Executive's rights and Employer's rights in such Inventions can be determined. Except as set forth on the initialed Exhibit B (List of Inventions) to this Agreement, if any, Executive represents and warrants that Executive has no Inventions, software, writings or other works of authorship useful to Employer in

the normal course of the Business, which were conceived, made or written prior to the date of this Agreement and which are excluded from the operation of this Agreement.

NOTICE: In accordance with Washington law, this Section 10 does not apply to Inventions for which no equipment, supplies, facility, or trade secret information of Employer was used and which was developed entirely on Executive's own time, unless: (a) the Invention relates (i) directly to the business of Employer or (ii) to Employer's actual or demonstrably anticipated research or development, or (b) the Invention results from any work performed by Executive for Employer.

11. **Cooperation.** The parties agree that certain matters in which Executive will be involved during the Term may necessitate Executive's cooperation in the future. Accordingly, following the termination of Executive's employment for any reason, to the extent reasonably requested by the Board, Executive shall cooperate with the Employer in connection with matters arising out of Executive's service to the Employer; provided that, the Employer shall make reasonable efforts to minimize disruption of Executive's other activities. The Employer shall reimburse Executive for reasonable expenses incurred in connection with such cooperation.

12. **Non-Disparagement.** Executive agrees and covenants that Executive will not at any time make, publish or communicate to any person or entity or in any public forum any defamatory or disparaging remarks, comments, or statements concerning the Employer or its businesses, or any of its employees, officers, and existing and prospective customers, suppliers, investors and other associated third parties. This Section 12 does not, in any way, restrict or impede Executive from exercising protected rights to the extent that such rights cannot be waived by agreement or from complying with any applicable law or regulation or a valid order of a court of competent jurisdiction or an authorized government agency, provided that such compliance does not exceed that required by the law, regulation, or order. The Executive shall promptly provide written notice of any such order to the Chief Financial Officer.

13. **Remedies.** Notwithstanding other provisions of this Agreement regarding dispute resolution, Executive agrees that Executive's violation of any of Sections 7, 8, 9, 10, 11 or 12 of this Agreement would cause Employer irreparable harm which would not be adequately compensated by monetary damages and that an injunction may be granted by any court or courts having jurisdiction, restraining Executive from violation of the terms of this Agreement, upon any breach or threatened breach of Executive of the obligations set forth in any of Sections 7, 8, 9, 10, 11 or 12. The preceding sentence shall not be construed to limit Employer from any other relief or damages to which it may be entitled as a result of Executive's breach of any provision of this Agreement, including Sections 7, 8, 9, 10, 11 or 12. Executive also agrees that a violation of any of Sections 7, 8, 9, 10, 11 or 12 would entitle Employer, in addition to all other remedies available at law or equity, to recover from Executive any and all funds, including, without limitation, wages, salary and profits, which will be held by Executive in constructive trust for Employer, received by Executive in connection with such violation.

14. **Dispute Resolution.** Except for the right of Employer and Executive to seek injunctive relief in court, any controversy, claim or dispute of any type arising out of or relating to Executive's employment or the provisions of this Agreement shall be resolved in accordance with this Section 14 regarding resolution of disputes, which will be the sole and exclusive procedure for the resolution of any disputes. This Agreement shall be enforced in accordance with the Federal Arbitration Act, the enforcement provisions of which are incorporated by this reference. Matters subject to these provisions include, without limitation, claims or disputes based on statute, contract, common law and tort and will include, for example, matters pertaining to termination, discrimination, harassment, compensation and benefits. Matters to be resolved under these procedures also include claims and disputes arising out of statutes such as the Fair Labor Standards Act, Title VII of the Civil Rights Act, the Age Discrimination in Employment Act, the Washington Minimum Wage Act, and the Washington Law Against Discrimination. Nothing in this provision is intended to restrict Executive from submitting any matter to an administrative agency with jurisdiction over such matter.

a. **Mediation.** Employer and Executive will make a good faith attempt to resolve any and all claims and disputes by submitting them to mediation in Snohomish County, Washington before resorting to arbitration or any other dispute resolution procedure. The mediation of any claim or dispute must be conducted in accordance with the then-current JAMS procedures for the resolution of employment disputes by mediation, by a mediator who has had both training and experience as a mediator of general employment and commercial matters. If the parties to this Agreement cannot agree on a mediator, then the mediator will be selected by JAMS in accordance with JAMS' strike list method. Within thirty (30) days after the selection of the mediator, Employer and Executive and their respective attorneys will meet with the mediator for one mediation session of at least four hours. If the claim or dispute cannot be settled during such mediation session or mutually agreed continuation of the session, either Employer or Executive may give the mediator and the other party to the claim or dispute written notice declaring the end of the mediation process. All discussions connected with this mediation provision will be confidential and treated as compromise and settlement discussions. Nothing disclosed in such discussions, which is not independently discoverable, may be used for any purpose in any later proceeding. The mediator's fees will be paid in equal portions by Employer and Executive, unless Employer agrees to pay all such fees.

b. **Arbitration.** If any claim or dispute has not been resolved in accordance with Section 14.a., then the claim or dispute will be determined by arbitration in accordance with the then-current JAMS employment arbitration rules and procedures, except as modified herein. The arbitration will be conducted by a sole neutral arbitrator who has had both training and experience as an arbitrator of general employment and commercial matters and who is and for at least ten (10) years has been, a partner, a shareholder, or a member in a law firm. The arbitration shall be held in Snohomish County, Washington. If Employer and Executive cannot agree on an arbitrator, then the arbitrator will be selected by JAMS in accordance

with Rule 15 of the JAMS employment arbitration rules and procedures. No person who has served as a mediator under the mediation provision, however, may be selected as the arbitrator for the same claim or dispute. Reasonable discovery will be permitted and the arbitrator may decide any issue as to discovery. The arbitrator may decide any issue as to whether or as to the extent to which any dispute is subject to the dispute resolution provisions in Section 14 and the arbitrator may award any relief permitted by law. The arbitrator must base the arbitration award on the provisions of Section 14 and applicable law and must render the award in writing, including an explanation of the reasons for the award. Judgment upon the award may be entered by any court having jurisdiction of the matter, and the decision of the arbitrator will be final and binding. The statute of limitations applicable to the commencement of a lawsuit will apply to the commencement of an arbitration under Section 14.b. The arbitrator's fees will be paid in equal portions by Employer and Executive, unless Employer agrees to pay all such fees.

15. **Fees Related to Dispute Resolution.** Unless otherwise agreed, the prevailing party will be entitled to its costs and attorneys' fees incurred in any litigation or dispute relating to the interpretation or enforcement of this Agreement.

16. **409A**. It is intended that any payment or benefit that is provided pursuant to or in connection with this Agreement that is considered to be deferred compensation subject to Section 409A of the Internal Revenue Code of 1986, as amended ("Code") shall be paid and provided in a manner, and at such time and form, as complies with the applicable requirements of Section 409A of the Code to avoid the unfavorable tax consequences provided therein for non-compliance. It is further intended that the payments hereunder shall, to the maximum extent permissible under Section 409A of the Code, be exempt from Section 409A of the Code under either (i) the exception for involuntary separation pay to the extent that all payments are payable within the limitations described in Treasury Regulation Section 1.409A-1(b)(9), or (ii) the short-term deferral exception described in Treasury Regulation Section 1.409A-1(b)(4) to the extent that all payments are payable no later than two and a half months after the end of the first taxable year in which the right to the payment is no longer subject to a substantial risk of forfeiture.

a. If the Executive is a "specified employee" for purposes of Section 409A(a)(2)(B)(i) of the Code at such time, any payments to be made or benefits to be delivered in connection with the Executive's "Separation from Service" (as defined below) that constitute deferred compensation subject to Section 409A of the Code shall not be made until six months plus one day after the Executive's Separation from Service (the "409A Deferral Period") as required by Section 409A of the Code, provided that the payment of any such deferred compensation may be paid immediately following the Executive's death. Payments of any such deferred compensation otherwise due to be made in installments or periodically during the 409A Deferral Period shall be accumulated and paid in a lump sum as soon as the 409A Deferral Period ends, and the balance of the payment shall be made as otherwise scheduled.

b. For purposes of this Agreement, all rights to payments and benefits hereunder shall be treated as rights to receive a series of separate payments and benefits to the fullest extent allowed by Section 409A of the Code.

c. For purposes of this Agreement, with respect to the timing of any amounts that constitute deferred compensation subject to Section 409A of the Code that depends on termination of employment or separation from service, termination of employment or separation from service shall mean a "separation from service" within the meaning of Section 409A of the Code where it is reasonably anticipated that no further services would be performed after such date or that the level of bona fide services the Executive would perform after that date (whether as an employee or independent contractor) would permanently decrease to a level less than or equal to twenty percent (20%) of the average level of bona fide services the Executive performed over the immediately preceding thirty-six (36) month period.

17. **Disclosure.** Executive agrees fully and completely to reveal the terms of this Agreement to any future employer or potential employer of Executive and authorizes Employer, at its election, to make such disclosure.

18. **Representation of Executive.** Executive represents and warrants to Employer that Executive is free to enter into this Agreement and has no contract, commitment, arrangement or understanding to or with any party that restrains or is in conflict with Executive's performance of the covenants, services and duties provided for in this Agreement, and is not contravene the terms of any statute, law, or regulation to which Executive is subject. Executive agrees to indemnify Employer and to hold it harmless against any and all liabilities or claims arising out of any unauthorized act or acts by Executive that, the foregoing representation and warranty to the contrary notwithstanding, are in violation, or constitute a breach, of any such contract, commitment, arrangement or understanding.

19. **Conditions of Employment.** Employer's obligations to Executive under this Agreement are conditioned upon Executive's timely compliance with requirements of the United States immigration laws.

20. **Assignability.** This Agreement shall not be assignable by Executive. This Agreement may be assigned by the Company to a company which is a successor in interest to substantially all of the business operations of the Company. Such assignment shall become effective when the Company notifies the Executive of such assignment or at such later date as may be specified in such notice. Upon such assignment, the rights and obligations of the Company hereunder shall become the rights and obligations of such successor company, provided that any assignee expressly assumes the obligations, rights and privileges of this Agreement.

21. **Notices.** Any notices required or permitted to be given hereunder are sufficient if in writing and delivered by hand, by facsimile, by registered or certified mail,

postage prepaid, or by overnight courier, to Executive at Executive's home address as most recently updated in Executive's Human Resources records, or to BioLife Solutions, Inc., 3303 Monte Villa Parkway, #310, Bothell, WA 98021, Attention: Chief Executive Officer. Notices shall be deemed to have been given (i) upon delivery, if delivered by hand or by email, (ii) seven days after mailing, if mailed, (iii) one business day after delivery, if delivered by courier, and (iv) one business day following receipt of an appropriate electronic confirmation, if by facsimile.

22. **Severability**. If any provision of this Agreement or compliance by any of the parties with any provision of this Agreement constitutes a violation of any law, or is or becomes unenforceable or void, then such provision, to the extent only that it is in violation of law, unenforceable or void, shall be deemed modified to the extent necessary so that it is no longer in violation of law, unenforceable or void, and such provision will be enforced to the fullest extent permitted by law. The Parties shall engage in good faith negotiations to modify and replace any provision which is declared invalid or unenforceable with a valid and enforceable provision, the economic effect of which comes as close as possible to that of the invalid or unenforceable provision which it replaces. If such modification is not possible, said provision, to the extent that it is in violation of law, unenforceable or void, shall be deemed severable from the remaining provisions of this Agreement, which provisions will remain binding on the parties.

23. **Waivers**. No failure on the part of either party to exercise, and no delay in exercising, any right or remedy hereunder will operate as a waiver thereof; nor will any single or partial waiver of a breach of any provision of this Agreement operate or be construed as a waiver of any subsequent breach; nor will any single or partial exercise of any right or remedy hereunder preclude any other or further exercise thereof or the exercise of any other right or remedy granted hereby or by law.

24. **Governing Law.** Except as provided in Section 14 above, the validity, construction and performance of this Agreement shall be governed by the laws of the State of Washington without regard to the conflicts of law provisions of such laws. The parties hereto expressly recognize and agree that the implementation of this Section 24 is essential in light of the fact that Employer has its corporate headquarters and its principal executive offices within the State of Washington, and there is a critical need for uniformity in the interpretation and enforcement of the employment agreements between Employer and its key employees. Aside from any disputes that must be resolved by arbitration as provided for in Section 14, the Snohomish County Superior Court in Washington shall have exclusive jurisdiction of any lawsuit arising from or relating to Executive's employment with, or termination from, Employer, or arising from or relating to this Agreement. Executive consents to such venue and personal jurisdiction.

25. **Counterparts.** This agreement may be executed in counterpart in different places, at different times and on different dates, and in that case all executed counterparts taken together collectively constitute a single binding agreement.

26. **Costs and Fees Related to Negotiation and Execution of Agreement.** Each Party Shall be responsible for the payment of its own costs and expenses, including legal fees and expenses, in connection with the negotiation and execution of this Agreement. Neither Party will be liable for the payment of any commissions or compensation in the nature of finders' fees or brokers' fees, gratuity or other similar thing or amount in consideration of the other Party entering into this Agreement to any broker, agent or third party acting on behalf of the other Party.

27. **Entire Agreement.** This instrument contains the entire agreement of the parties with respect to the relationship between Executive and Employer and supersedes all prior agreements and understandings, and there are no other representations or agreements other than as stated in this Agreement related to the terms and conditions of Executive's employment. This Agreement may be changed only by an agreement in writing signed by the party against whom enforcement of any waiver, change, modification, extension or discharge is sought, and any such modification will be signed by an authorized representative of Employer.

IN WITNESS WHEREOF, the parties have duly signed and delivered this Agreement as of the day and year first above written.

EMPLOYER

By:_____
Title: Chief Executive Officer

EXECUTIVE

_____

Karen Foster

EXHIBIT A

DISCLOSURE OF OUTSIDE BOARD OF DIRECTORS AND TRUSTEE POSITIONS

EXHIBIT B

LIST OF INVENTIONS

AMENDED AND RESTATED EXECUTIVE EMPLOYMENT AGREEMENT

THIS AMENDED AND RESTATED EXECUTIVE EMPLOYMENT AGREEMENT (this "Agreement") is made between BioLife Solutions Inc., a Delaware corporation ("Employer" or the "Company"), and Sarah Aebersold ("Executive"). Executive and the Company are sometimes referred to herein as the "Parties". The effective date of this Agreement is June 1, 2023. This Agreement supersedes and replaces all prior employment agreements (and any amendments thereto) between the Company and Executive, including, for the avoidance of doubt, the employment agreement between the Parties that became effective on January 1, 2021 and any amendments thereto.

RECITALS

A. Employer is in the business (the "Business") of manufacturing and marketing biopreservation media and cold chain products for cells, tissues, and organs.

B. Employer desires to obtain the services of Executive, in which capacity Executive has access to Employer's Confidential Information (as hereinafter defined), and to obtain assurance that Executive will protect Employer's Confidential Information and will not compete with Employer or solicit its customers or its other employees during the term of employment and for a reasonable period of time after termination of employment pursuant to this Agreement, and Executive is willing to agree to these terms.

C. Executive desires to be assured of the salary and other benefits provided for in this Agreement.

AGREEMENT

NOW, THEREFORE, in consideration of the mutual covenants herein contained, and other good and valuable consideration, the sufficiency and receipt of which are hereby acknowledged, the parties agree as follows:

1. **Employment**.

a. Employer hereby employs Executive, and Executive agrees to be employed as Chief Human Resources Officer ("CHRO"), in accordance with the terms and conditions set forth in this Agreement. Changes may be made from time to time by Employer and/or the Board in its sole discretion to the duties, authorities, reporting relationships and title of Executive.

b. Executive will devote full time, attention, and best efforts to achieving the purposes and discharging the responsibilities of the CHRO. Executive will comply with all rules, policies and procedures of Employer as modified from time to time, including without limitation, rules and procedures set forth in the

Employer's employee handbook, supervisor's manuals and operating manuals. Executive will perform all of Executive's responsibilities in compliance with all applicable laws and will ensure that the operations that Executive manages are in compliance with all applicable laws. During Executive's employment, Executive will not engage in any other business activity which, in the reasonable judgment of the Employer, conflicts with the duties of Executive under this Agreement, whether or not such activity is pursued for gain, profit or other pecuniary advantage.

c. Nothing herein shall preclude Executive from: (1) continuing to serve on the board of directors or trustees of any business corporation or any charitable organization on which Executive currently serves and which is identified on Exhibit A hereto, or (2) subject to the prior approval of the Board, appointment to any additional directorships or trusteeships, or (3) serving in an advisory role for other business entities, provided in each case, and in the aggregate, that such activities do not interfere with the performance of Executive's duties hereunder or conflict with Section 7 of this Agreement.

2. **Term of Employment**. The term of employment ("Term") will not be for a definite period, but rather continue indefinitely until terminated in accordance with the terms and conditions of this Agreement.

3. **Compensation.** For the duration of Executive's employment hereunder, the Executive will be entitled to compensation which will be computed and paid pursuant to the following subparagraphs.

a. **Base Salary.** Employer will pay to Executive a base salary ("Base Salary") at an annual rate of Three hundred twenty-five thousand Dollars ($325,000), payable in such installments (but in no event less than monthly), subject to withholdings and deductions as required or permitted by law, as is Employer's policy with respect to other employees. Executive's Base Salary will be reviewed periodically by the Board of Directors of Employer during the term of Executive's employment and may be adjusted in the sole discretion of the Board of Directors based on such review, but will not be reduced by Employer unless a material adverse change in the financial condition or operations of Employer has occurred or unless Executive's responsibilities are altered to reflect less responsibility.

b. **Performance Bonus.** Employer under direction of its Board may pay or cause to be paid to Executive such Bonus as it from time to time determines appropriate, up to an annual maximum of 40% of Executive's Base Salary, to be payable in cash or stock in the Board's sole discretion.

4. **Other Benefits**.

a. **Certain Benefits.** Executive will be eligible to participate in all employee benefit programs established by Employer that are applicable to management

personnel such as medical, pension, disability and life insurance plans on a basis commensurate with Executive's position and in accordance with Employer's policies from time to time, but nothing herein shall require the adoption or maintenance of any such plan.

b. **Vacations, Holidays and Expenses.** Executive will be provided accrued paid vacation of three (3) weeks each calendar year, which shall be the maximum number of days Executive may accrue at any time, and which shall be taken at such times as are consistent with Executive's responsibilities hereunder. Executive will be provided such holidays and vacation as Executive makes available to its management level employees generally. Employer will reimburse Executive in accordance with company policies and procedures for reasonable expenses necessarily incurred in the performance of duties hereunder against appropriate receipts and vouchers indicating the specific business purpose for each such expenditure. In no case shall any reimbursement be made later than December 31st of the year following the calendar year in which such expense is incurred.

c. **Right of Set-off.** By accepting this Agreement, Executive consents to a deduction from any amounts Employer owes Executive from time to time (including amounts owed to Executive as wages or other compensation, fringe benefits, or vacation pay, as well as any other amounts owed to Executive by Employer), to the extent of the amounts Executive owes to Employer. Whether or not Employer elects to make any set-off in whole or in part, if Employer does not recover by means of set-off the full amount Executive owes it, calculated as set forth above, Executive agrees to pay immediately the unpaid balance to Employer.

5. **Termination, Discharge**.

a. **For Cause.** Employer will have the right to immediately terminate Executive's services and this Agreement for Cause. "Cause" means the Employer's belief that any of the following has occurred:

(i) any breach of this Agreement by Executive, including, without limitation, breach of Executive's covenants in Sections 7, 8, 9, 10, 11 or 12;

(ii) any failure to perform assigned job responsibilities that continues unremedied for a period of ten (10) days after written notice to Executive by Employer;

(iii) Executive's malfeasance or misconduct in connection with Executive's duties hereunder or any act or omission of Executive which is materially injurious to the financial condition or business reputation of the Company or any of its subsidiaries or affiliates,

(iv) commission or conviction of a felony or misdemeanor (other than a misdemeanor traffic violation), including a plea of guilty or failure to contest prosecution for a felony or misdemeanor;

(v) the Employer's reasonable belief that Executive engaged in a violation of any statute, rule or regulation, any of which in the judgment of Employer is harmful to the Business or to Employer's reputation;

(vi) the Employer's reasonable belief that Executive engaged in unethical practices, dishonesty or disloyalty, unless Executive has evidence establishing that Employer directed Executive to commit such practice or act;

(vii) or any reason that would constitute Cause under the laws the State of Washington.

Upon termination of Executive's employment hereunder for Cause, the Company shall pay the Executive no later than fourteen (14) days from the termination date in a lump sum: (x) Executive's salary through the date of termination, (y) for any unused vacation time, and (z) for any unreimbursed business expenses that are subject to reimbursement under Employer's then current policy on business expenses. Executive will have no rights to any unvested benefits or any other compensation or payments after the termination date.

b. **Due to Death or Disability.** Employer will have the right to immediately terminate Executive's services and this Agreement due to death or disability. For purposes of this Agreement, "disability" means the incapacity or inability of Executive, whether due to accident, sickness or otherwise, as determined by a medical doctor acceptable to the Board of Directors of Employer and confirmed in writing by such doctor, to perform the essential functions of Executive's position under this Agreement, with or without reasonable accommodation (provided that no accommodation that imposes undue hardship on Employer will be required) for a period of sixty (60) consecutive days or for an aggregate of ninety (90) days during any period of twelve (12) months, or such longer period as may be required under disability law.

Upon termination of Executive's employment hereunder due to death or disability, the Company shall pay the Executive no later than fourteen (14) days from the termination date in a lump sum: (i) Executive's salary through the date of termination, (ii) a prorated portion of any incentive bonus opportunity previously approved by the Board, (iii) for any unused vacation time, and (iv) for any unreimbursed business expenses that are subject to reimbursement under Employer's then current policy on business expenses. Upon termination of Executive's employment hereunder due to death or disability, all unvested stock

options, awards, or other equity grants or awards shall immediately fully vest for the benefit of Executive's estate. Executive or Executive's estate (as the case may be) shall be entitled to receive any vested benefits required to be paid by law and any vested compensation required to be paid by law.

c. **Without Cause.** Employer may terminate Executive's employment under this Agreement without cause and without advance notice; provided, however, that Employer will pay (unless subparagraph 5.d of this Agreement applies, in which case the provisions therein shall govern), no later than fourteen (14) days from the termination date in a lump sum:

(i) (x) Executive's salary through the date of termination, (y) for any unused vacation time, and (z) for any unreimbursed business expenses that are subject to reimbursement under Employer's then current policy on business expenses.

(ii) severance pay of twelve (12) months' worth of Executive's salary at the rate in effect on the termination date.

(iii) the amount equal to the cost of twelve (12) months' medical insurance premiums at a monthly amount equal to the amount of COBRA coverage in effect as of the termination date; and

(iv) an additional tax gross up payment in an amount necessary so that the amount received by Executive to cover COBRA premiums under Section 5.c(iii) after all applicable withholding tax is deducted (using applicable supplemental wage withholding rates) is the full amount Executive would have received under Section 5.c(iii) if no tax withholding was made.

Such payments will be subject to all appropriate deductions and withholdings. Upon termination of Executive's employment hereunder due to termination without cause, all unvested stock options, awards, or other equity grants or awards shall immediately fully vest. Executive or Executive's estate (as the case may be) shall be entitled to receive any vested benefits required to be paid by law and any vested compensation required to be paid by law.

Executive shall only be entitled to such severance pay if, within thirty (30) days following the date of termination, both Employer and Executive have signed (and then Executive does not rescind, as may be permitted by law) a mutual general release of claims in a form mutually acceptable to both parties (provided, however, that such release of claims shall only require each party to release the other party from claims relating directly to Executive's employment and the termination thereof, and shall not require Executive to release claims relating to vested

employee benefits or relating to other matters, including, but not limited to, claims relating to Executive's status as a shareholder of the Company.

d. **Change in Control**.

(i) For purposes of this Agreement, Change in Control shall mean (x) the consummation of a merger or consolidation of the Company with or into another entity, (y) the dissolution, liquidation or winding up of the Company or (z) the sale of all or substantially all of the Company's assets. The foregoing notwithstanding, a merger or consolidation of the Company shall not constitute a "Change in Control" if immediately after such merger or consolidation a majority of the voting power of the capital stock of the continuing or surviving entity, or any direct or indirect parent corporation of such continuing or surviving entity, will be owned by the persons who were the Company's stockholders immediately prior to such merger or consolidation in substantially the same proportions as their ownership of the voting power of the Company's capital stock immediately prior to such merger or consolidation.

(ii) Employer may terminate Executive's employment under this Agreement or Executive may resign for Good Reason upon or within 12 months following a Change in Control without advance notice; provided, however, that Employer will pay, no later than sixty (60) days from the termination date in a lump sum:

(A) (i) Executive's salary through the date of termination, (ii) for any unused vacation time, and (iii) for any unreimbursed business expenses that are subject to reimbursement under Employer's then current policy on business expenses;

(B) as severance pay, twelve (12) months' worth of Executive's salary at the rate in effect on the termination date;

(C) 100% of any incentive cash and/or stock bonus opportunity for the current year;

(D) the amount equal to the cost of twelve (12) months' medical insurance premiums at a monthly amount equal to the amount of COBRA coverage in effect as of the termination date; and

(E) an additional tax gross up payment in an amount necessary so that the amount received by Executive to cover COBRA premiums under Section 5.d(ii)(D) after all applicable withholding tax is deducted (using applicable supplemental wage withholding rates) is

the full amount Executive would have received under Section 5.d(ii)(D) if no tax withholding was made.

(iii) Executive shall only be entitled to such severance pay if, within thirty (30) days following the date of termination, both Employer and Executive have signed (and then Executive does not rescind, as may be permitted by law) a mutual general release of claims in a form mutually acceptable to both parties (provided, however, that such release of claims shall only require each party to release the other party from claims relating directly to Executive's employment and the termination thereof, and shall not require Executive to release claims relating to vested employee benefits or relating to other matters, including, but not limited to, claims relating to Executive's status as a shareholder of the Company.

(iv) Upon termination of Executive's employment hereunder due to a Change in Control, including by Executive for Good Reason, all unvested stock options, awards, or other equity grants or awards shall immediately fully vest. Executive or Executive's estate (as the case may be) shall be entitled to receive any vested benefits required to be paid by law and any vested compensation required to be paid by law.

e. **No Fault Termination By Executive.** Executive may terminate Executive's employment under this Agreement for any reason provided that Executive gives Employer at least ninety (90) days' notice in writing. Employer may, at its option, accelerate such termination date to any date at least two weeks after Executive's notice of termination. Employer may also, at its option, relieve Executive of all duties and authority after notice of termination has been provided. Upon termination of Executive's employment in accordance with this Section, Company shall pay the Executive no later than fourteen (14) days from the termination date in a lump sum: (i) Executive's salary through the date of termination, (ii) for any unused vacation time, and (iii) for any unreimbursed business expenses that are subject to reimbursement under Employer's then current policy on business expenses. Such payments will be subject to all appropriate deductions and withholdings. Upon termination, Executive will have no rights to any unvested benefits or any other compensation.

f. **Termination By Executive for Good Reason.** Executive's employment pursuant to this Agreement shall terminate in the event Executive shall determine that there is "Good Reason" to terminate Executive's employment, which shall mean the following:

(i) Employer's material breach of the terms of this Agreement or any other written agreement between Executive and Employer; or

(ii) The occurrence of any of the following conditions, without Executive's consent:

(A) a significant diminution in the nature or scope of Executive's authority, title, function or duties;

(B) a ten percent (10%) reduction in Executive's base salary or a twenty-five percent (25%) reduction in Executive's target bonus opportunity (unless such reduction is part of a Company officer-wide program to reduce expenses);

(C) the Company's requiring Executive to be based and work out of an office or location more than 50 miles from the office where Executive is currently employed;

(D) any material breach of the terms of this Agreement by the Company; or

(E) failure of any successor or assignee to the Company to assume this Agreement.

Provided that Executive has provided with notice of the existence of a condition giving rise to "Good Reason" to terminate within ninety (90) days following the initial existence of such a condition, Employer shall have thirty (30) days to cure any such alleged breach, assignment, reduction or requirement referenced above, after Executive provides Employer written notice of the actions or omissions constituting such breach, assignment, reduction or requirement.

If Executive resigns Executive's employment for Good Reason, Executive shall be paid no later than fourteen (14) days from the termination date in a lump sum:

I. (i) Executive's salary through the date of termination, (ii) for any unused vacation time, and (iii) for any unreimbursed business expenses that are subject to reimbursement under Employer's then current policy on business expenses.

II. severance pay of twelve (12) months' worth of Executive's salary at the rate in effect on the termination date.

III. the amount equal to the cost of twelve (12) months' medical insurance premiums at a monthly amount equal to the amount of COBRA coverage in effect as of the termination date; and

IV. an additional tax gross up payment in an amount necessary so that the amount received by Executive to cover COBRA premiums under Section 5.f(III) after all applicable withholding tax is deducted (using applicable supplemental wage withholding rates) is the full amount Executive would have received under Section 5.f(III) if no tax withholding was made.

Such payments will be subject to all appropriate deductions and withholdings. Upon termination of Executive's employment hereunder due to resignation for good reason, all unvested stock options, awards, or other equity grants or awards shall immediately fully vest. Executive or Executive's estate (as the case may be) shall be entitled to receive any vested benefits required to be paid by law and any vested compensation required to be paid by law.

Executive shall only be entitled to such severance pay if, within thirty (30) days following the date of termination, both Employer and Executive have signed (and then Executive does not rescind, as may be permitted by law) a mutual general release of claims in a form mutually acceptable to both parties (provided, however, that such release of claims shall only require each party to release the other party from claims relating directly to Executive's employment and the termination thereof, and shall not require Executive to release claims relating to vested employee benefits or relating to other matters, including, but not limited to, claims relating to Executive's status as a shareholder of the Company.

6. **Return of Company Property.** Upon termination of this Agreement or upon request of the Company, Executive shall deliver to the Corporation all property, documents and materials pertaining to the Company's business including, but not limited to, memoranda, notes, records, drawings, manuals, disks, copies, representations, extracts, summaries and analyses, all inventory, demonstration units, and any other property, documents or media of the Corporation, and all equipment belonging to the company, including but not limited to corporate cards, access cards, office keys, office equipment, laptop and desktop computers, cell phones and other wireless devices, thumb drives, zip drives and all other media storage devices.

7. **Covenant Not To Compete.** During Executive's employment by Employer and for a period expiring one (1) year after the termination of Executive's employment for any reason, Executive covenants and agrees that Executive will not:

a. Directly, indirectly, or otherwise, own, manage, operate, control, serve as a consultant to, be employed by, participate in, or be connected, in any manner, with the ownership, management, operation or control of any business that competes with the Business or that competes with Employer or any of its affiliates or that is engaged in any type of business which, at any time during Executive's employment with Employer, Employer or any of its affiliates planned to develop;

b. Hire, offer to hire, entice away or in any other manner persuade or attempt to persuade any officer, employee or agent of Employer or any of its affiliates to alter or discontinue a relationship with Employer or to do any act that is inconsistent with the interests of Employer or any of its affiliates;

c. Directly or indirectly solicit, divert, take away or attempt to solicit, divert or take away any customers of Employer or any of its affiliates; or

d. Directly or indirectly solicit, divert, or in any other manner persuade or attempt to persuade any supplier of Employer or any of its affiliates to alter or discontinue its relationship with Employer or any of its affiliates.

For the purposes of this Section 7, businesses that are deemed to compete with Employer include, without limitation, businesses engaged in manufacturing and marketing biopreservation media for cells, tissues, and organs or cold chain management products and/or services. The geographic scope of the prohibitions in this Section 7 shall be any city, town or county in which the Company conducts or does any business as of or within one (1) year of Executive's last day of employment with the Company. Notwithstanding Executive's obligations under this Section 7, Executive will be entitled to own, as a passive investor, up to five percent (5%) of any publicly traded company without violating this provision.

Employer and Executive agree that: this provision does not impose an undue hardship on Executive and is not injurious to the public; that this provision is necessary to protect the business of Employer and its affiliates; the nature of Executive's responsibilities with Employer under this Agreement require Executive to have access to confidential information which is valuable and confidential to all of the Business; the scope of this Section 7 is reasonable in terms of length of time and geographic scope; and adequate consideration supports this Section 7, including consideration herein.

8. **Confidential Information.** Executive recognizes that Employer's business and continued success depend upon the use and protection of confidential and proprietary business information, including, without limitation, the information and technology developed by or available through licenses to Employer, to which Executive has access (all such information being "Confidential Information"). For purposes of this Agreement, the phrase "Confidential Information" includes, for Employer and its current or future subsidiaries and affiliates, without limitation, and whether or not specifically designated as confidential or proprietary: all business plans and marketing strategies; information concerning existing and prospective markets and customers; financial information; information concerning the development of new products and services; information concerning any personnel of Employer (including, without limitation, skills and compensation information); intellectual property; and technical and non-technical data related to software programs, designs, specifications, compilations, inventions, improvements, methods, processes, procedures and techniques; provided, however, that the phrase does not include information that (a) was lawfully in Executive's possession prior

to disclosure of such information by Employer; (b) was, or at any time becomes, available in the public domain other than through a violation of this Agreement; (c) is documented by Executive as having been developed by Executive outside the scope of Executive's employment and independently; or (d) is furnished to Executive by a third party not under an obligation of confidentiality to Employer. Executive agrees that during Executive's employment and after termination of employment irrespective of cause, Executive will use Confidential Information only (i) while employed by the Company, in the business of and for the benefit of the Company, or (ii) when required to do so by a court of competent jurisdiction, by any governmental agency having supervisory authority over the business of the Company, or by any administrative body or legislative body (including a committee thereof) with jurisdiction to order Executive to divulge, disclose or make accessible such information, and then only after providing written notice to Employer that such a demand has been made. Executive's obligation under this Agreement is in addition to any obligations Executive has under state or federal law. Executive agrees to deliver to Employer immediately upon termination of Executive's employment, or at any time Employer so requests, all tangible items containing any Confidential Information (including, without limitation, all memoranda, photographs, records, reports, manuals, drawings, blueprints, prototypes, notes taken by or provided to Executive, and any other documents or items of a confidential nature belonging to Employer), together with all copies of such material in Executive's possession or control. Executive agrees that in the course of Executive's employment with Employer, Executive will not violate in any way the rights that any entity has with regard to trade secrets or proprietary or confidential information. Executive's obligations under this Section 8 are indefinite in term and shall survive the termination of this Agreement.

9. **Work Product and Copyrights.** Executive agrees that all right, title and interest in and to the materials resulting from the performance of Executive's duties at Employer and all copies thereof, including works in progress, in whatever media, (the "Work"), will be and remain in Employer upon their creation. Executive will mark all Work with Employer's copyright or other proprietary notice as directed by Employer. Executive further agrees:

a. To the extent that any portion of the Work constitutes a work protectable under the copyright laws of the United States (the "Copyright Law"), that all such Work will be considered a "work made for hire" as such term is used and defined in the Copyright Law, and that Employer will be considered the "author" of such portion of the Work and the sole and exclusive owner throughout the world of copyright therein; and

b. If any portion of the Work does not qualify as a "work made for hire" as such term is used and defined in the Copyright Law, that Executive hereby assigns and agrees to assign to Employer, without further consideration, all right, title and interest in and to such Work or in any such portion thereof and any copyright therein and further agrees to execute and deliver to Employer, upon request, appropriate assignments of such Work and copyright therein and such other documents and instruments as Employer may request to fully and completely assign such Work

and copyright therein to Employer, its successors or nominees, and that Executive hereby appoints Employer as attorney-in-fact to execute and deliver any such documents on Executive's behalf in the event Executive should fail or refuse to do so within a reasonable period following Employer's request.

10. **Inventions and Patents.** For purposes of this Agreement, "Inventions" includes, without limitation, information, inventions, contributions, improvements, ideas, or discoveries, whether protectable or not, and whether or not conceived or made during work hours. Executive agrees that all Inventions conceived or made by Executive during the period of employment with Employer belong to Employer, provided they grow out of Executive's work with Employer or are related in some manner to the Business, including, without limitation, research and product development, and projected business of Employer or its affiliated companies. Accordingly, Executive will:

a. Make adequate written records of such Inventions, which records will be Employer's property;

b. Assign to Employer, at its request, any rights Executive may have to such Inventions for the U.S. and all foreign countries;

c. Waive and agree not to assert any moral rights Executive may have or acquire in any Inventions and agree to provide written waivers from time to time as requested by Employer; and

d. Assist Employer (at Employer's expense) in obtaining and maintaining patents or copyright registrations with respect to such Inventions.

Executive understands and agrees that Employer or its designee will determine, in its sole and absolute discretion, whether an application for patent will be filed on any Invention that is the exclusive property of Employer, as set forth above, and whether such an application will be abandoned prior to issuance of a patent. Employer will pay to Executive, either during or after the term of this Agreement, the following amounts if Executive is sole inventor, or Executive's proportionate share if Executive is joint inventor: $750 upon filing of the initial application for patent on such Invention; and $1,500 upon issuance of a patent resulting from such initial patent application, provided Executive is named as an inventor in the patent.

Executive further agrees that Executive will promptly disclose in writing to Employer during the term of Executive's employment and for one (1) year thereafter, all Inventions whether developed during the time of such employment or thereafter (whether or not Employer has rights in such Inventions) so that Executive's rights and Employer's rights in such Inventions can be determined. Except as set forth on the initialed Exhibit B (List of Inventions) to this Agreement, if any, Executive represents and warrants that Executive has no Inventions, software, writings or other works of authorship useful to Employer in

the normal course of the Business, which were conceived, made or written prior to the date of this Agreement and which are excluded from the operation of this Agreement.

NOTICE: In accordance with Washington law, this Section 10 does not apply to Inventions for which no equipment, supplies, facility, or trade secret information of Employer was used and which was developed entirely on Executive's own time, unless: (a) the Invention relates (i) directly to the business of Employer or (ii) to Employer's actual or demonstrably anticipated research or development, or (b) the Invention results from any work performed by Executive for Employer.

11. **Cooperation.** The parties agree that certain matters in which Executive will be involved during the Term may necessitate Executive's cooperation in the future. Accordingly, following the termination of Executive's employment for any reason, to the extent reasonably requested by the Board, Executive shall cooperate with the Employer in connection with matters arising out of Executive's service to the Employer; provided that, the Employer shall make reasonable efforts to minimize disruption of Executive's other activities. The Employer shall reimburse Executive for reasonable expenses incurred in connection with such cooperation.

12. **Non-Disparagement.** Executive agrees and covenants that Executive will not at any time make, publish or communicate to any person or entity or in any public forum any defamatory or disparaging remarks, comments, or statements concerning the Employer or its businesses, or any of its employees, officers, and existing and prospective customers, suppliers, investors and other associated third parties. This Section 12 does not, in any way, restrict or impede Executive from exercising protected rights to the extent that such rights cannot be waived by agreement or from complying with any applicable law or regulation or a valid order of a court of competent jurisdiction or an authorized government agency, provided that such compliance does not exceed that required by the law, regulation, or order. The Executive shall promptly provide written notice of any such order to the Board of Directors.

13. **Remedies.** Notwithstanding other provisions of this Agreement regarding dispute resolution, Executive agrees that Executive's violation of any of Sections 7, 8, 9, 10, 11 or 12 of this Agreement would cause Employer irreparable harm which would not be adequately compensated by monetary damages and that an injunction may be granted by any court or courts having jurisdiction, restraining Executive from violation of the terms of this Agreement, upon any breach or threatened breach of Executive of the obligations set forth in any of Sections 7, 8, 9, 10, 11 or 12. The preceding sentence shall not be construed to limit Employer from any other relief or damages to which it may be entitled as a result of Executive's breach of any provision of this Agreement, including Sections 7, 8, 9, 10, 11 or 12. Executive also agrees that a violation of any of Sections 7, 8, 9, 10, 11 or 12 would entitle Employer, in addition to all other remedies available at law or equity, to recover from Executive any and all funds, including, without limitation, wages, salary and profits, which will be held by Executive in constructive trust for Employer, received by Executive in connection with such violation.

14. **Dispute Resolution.** Except for the right of Employer and Executive to seek injunctive relief in court, any controversy, claim or dispute of any type arising out of or relating to Executive's employment or the provisions of this Agreement shall be resolved in accordance with this Section 14 regarding resolution of disputes, which will be the sole and exclusive procedure for the resolution of any disputes. This Agreement shall be enforced in accordance with the Federal Arbitration Act, the enforcement provisions of which are incorporated by this reference. Matters subject to these provisions include, without limitation, claims or disputes based on statute, contract, common law and tort and will include, for example, matters pertaining to termination, discrimination, harassment, compensation and benefits. Matters to be resolved under these procedures also include claims and disputes arising out of statutes such as the Fair Labor Standards Act, Title VII of the Civil Rights Act, the Age Discrimination in Employment Act, the Washington Minimum Wage Act, and the Washington Law Against Discrimination. Nothing in this provision is intended to restrict Executive from submitting any matter to an administrative agency with jurisdiction over such matter.

a. **Mediation.** Employer and Executive will make a good faith attempt to resolve any and all claims and disputes by submitting them to mediation in Snohomish County, Washington before resorting to arbitration or any other dispute resolution procedure. The mediation of any claim or dispute must be conducted in accordance with the then-current JAMS procedures for the resolution of employment disputes by mediation, by a mediator who has had both training and experience as a mediator of general employment and commercial matters. If the parties to this Agreement cannot agree on a mediator, then the mediator will be selected by JAMS in accordance with JAMS' strike list method. Within thirty (30) days after the selection of the mediator, Employer and Executive and their respective attorneys will meet with the mediator for one mediation session of at least four hours. If the claim or dispute cannot be settled during such mediation session or mutually agreed continuation of the session, either Employer or Executive may give the mediator and the other party to the claim or dispute written notice declaring the end of the mediation process. All discussions connected with this mediation provision will be confidential and treated as compromise and settlement discussions. Nothing disclosed in such discussions, which is not independently discoverable, may be used for any purpose in any later proceeding. The mediator's fees will be paid in equal portions by Employer and Executive, unless Employer agrees to pay all such fees.

b. **Arbitration.** If any claim or dispute has not been resolved in accordance with Section 14.a., then the claim or dispute will be determined by arbitration in accordance with the then-current JAMS employment arbitration rules and procedures, except as modified herein. The arbitration will be conducted by a sole neutral arbitrator who has had both training and experience as an arbitrator of general employment and commercial matters and who is and for at least ten (10) years has been, a partner, a shareholder, or a member in a law firm. The arbitration shall be held in Snohomish County, Washington. If Employer and Executive cannot agree on an arbitrator, then the arbitrator will be selected by JAMS in accordance

with Rule 15 of the JAMS employment arbitration rules and procedures. No person who has served as a mediator under the mediation provision, however, may be selected as the arbitrator for the same claim or dispute. Reasonable discovery will be permitted and the arbitrator may decide any issue as to discovery. The arbitrator may decide any issue as to whether or as to the extent to which any dispute is subject to the dispute resolution provisions in Section 14 and the arbitrator may award any relief permitted by law. The arbitrator must base the arbitration award on the provisions of Section 14 and applicable law and must render the award in writing, including an explanation of the reasons for the award. Judgment upon the award may be entered by any court having jurisdiction of the matter, and the decision of the arbitrator will be final and binding. The statute of limitations applicable to the commencement of a lawsuit will apply to the commencement of an arbitration under Section 14.b. The arbitrator's fees will be paid in equal portions by Employer and Executive, unless Employer agrees to pay all such fees.

15. **Fees Related to Dispute Resolution.** Unless otherwise agreed, the prevailing party will be entitled to its costs and attorneys' fees incurred in any litigation or dispute relating to the interpretation or enforcement of this Agreement.

16. **409A**. It is intended that any payment or benefit that is provided pursuant to or in connection with this Agreement that is considered to be deferred compensation subject to Section 409A of the Internal Revenue Code of 1986, as amended ("Code") shall be paid and provided in a manner, and at such time and form, as complies with the applicable requirements of Section 409A of the Code to avoid the unfavorable tax consequences provided therein for non-compliance. It is further intended that the payments hereunder shall, to the maximum extent permissible under Section 409A of the Code, be exempt from Section 409A of the Code under either (i) the exception for involuntary separation pay to the extent that all payments are payable within the limitations described in Treasury Regulation Section 1.409A-1(b)(9), or (ii) the short-term deferral exception described in Treasury Regulation Section 1.409A-1(b)(4) to the extent that all payments are payable no later than two and a half months after the end of the first taxable year in which the right to the payment is no longer subject to a substantial risk of forfeiture.

a. If the Executive is a "specified employee" for purposes of Section 409A(a)(2)(B)(i) of the Code at such time, any payments to be made or benefits to be delivered in connection with the Executive's "Separation from Service" (as defined below) that constitute deferred compensation subject to Section 409A of the Code shall not be made until six months plus one day after the Executive's Separation from Service (the "409A Deferral Period") as required by Section 409A of the Code, provided that the payment of any such deferred compensation may be paid immediately following the Executive's death. Payments of any such deferred compensation otherwise due to be made in installments or periodically during the 409A Deferral Period shall be accumulated and paid in a lump sum as soon as the 409A Deferral Period ends, and the balance of the payment shall be made as otherwise scheduled.

b. For purposes of this Agreement, all rights to payments and benefits hereunder shall be treated as rights to receive a series of separate payments and benefits to the fullest extent allowed by Section 409A of the Code.

c. For purposes of this Agreement, with respect to the timing of any amounts that constitute deferred compensation subject to Section 409A of the Code that depends on termination of employment or separation from service, termination of employment or separation from service shall mean a "separation from service" within the meaning of Section 409A of the Code where it is reasonably anticipated that no further services would be performed after such date or that the level of bona fide services the Executive would perform after that date (whether as an employee or independent contractor) would permanently decrease to a level less than or equal to twenty percent (20%) of the average level of bona fide services the Executive performed over the immediately preceding thirty-six (36) month period.

17. **Disclosure.** Executive agrees fully and completely to reveal the terms of this Agreement to any future employer or potential employer of Executive and authorizes Employer, at its election, to make such disclosure.

18. **Representation of Executive.** Executive represents and warrants to Employer that Executive is free to enter into this Agreement and has no contract, commitment, arrangement or understanding to or with any party that restrains or is in conflict with Executive's performance of the covenants, services and duties provided for in this Agreement, and is not contravene the terms of any statute, law, or regulation to which Executive is subject. Executive agrees to indemnify Employer and to hold it harmless against any and all liabilities or claims arising out of any unauthorized act or acts by Executive that, the foregoing representation and warranty to the contrary notwithstanding, are in violation, or constitute a breach, of any such contract, commitment, arrangement or understanding.

19. **Conditions of Employment.** Employer's obligations to Executive under this Agreement are conditioned upon Executive's timely compliance with requirements of the United States immigration laws.

20. **Assignability.** This Agreement shall not be assignable by Executive. This Agreement may be assigned by the Company to a company which is a successor in interest to substantially all of the business operations of the Company. Such assignment shall become effective when the Company notifies the Executive of such assignment or at such later date as may be specified in such notice. Upon such assignment, the rights and obligations of the Company hereunder shall become the rights and obligations of such successor company, provided that any assignee expressly assumes the obligations, rights and privileges of this Agreement.

21. **Notices.** Any notices required or permitted to be given hereunder are sufficient if in writing and delivered by hand, by facsimile, by registered or certified mail,

postage prepaid, or by overnight courier, to Executive at Executive's home address as most recently updated in Executive's Human Resources records, or to BioLife Solutions, Inc., 3303 Monte Villa Parkway, #310, Bothell, WA 98021, Attention: Chief Executive Officer. Notices shall be deemed to have been given (i) upon delivery, if delivered by hand or by email, (ii) seven days after mailing, if mailed, (iii) one business day after delivery, if delivered by courier, and (iv) one business day following receipt of an appropriate electronic confirmation, if by facsimile.

22. **Severability**. If any provision of this Agreement or compliance by any of the parties with any provision of this Agreement constitutes a violation of any law, or is or becomes unenforceable or void, then such provision, to the extent only that it is in violation of law, unenforceable or void, shall be deemed modified to the extent necessary so that it is no longer in violation of law, unenforceable or void, and such provision will be enforced to the fullest extent permitted by law. The Parties shall engage in good faith negotiations to modify and replace any provision which is declared invalid or unenforceable with a valid and enforceable provision, the economic effect of which comes as close as possible to that of the invalid or unenforceable provision which it replaces. If such modification is not possible, said provision, to the extent that it is in violation of law, unenforceable or void, shall be deemed severable from the remaining provisions of this Agreement, which provisions will remain binding on the parties.

23. **Waivers**. No failure on the part of either party to exercise, and no delay in exercising, any right or remedy hereunder will operate as a waiver thereof; nor will any single or partial waiver of a breach of any provision of this Agreement operate or be construed as a waiver of any subsequent breach; nor will any single or partial exercise of any right or remedy hereunder preclude any other or further exercise thereof or the exercise of any other right or remedy granted hereby or by law.

24. **Governing Law.** Except as provided in Section 14 above, the validity, construction and performance of this Agreement shall be governed by the laws of the State of Washington without regard to the conflicts of law provisions of such laws. The parties hereto expressly recognize and agree that the implementation of this Section 24 is essential in light of the fact that Employer has its corporate headquarters and its principal executive offices within the State of Washington, and there is a critical need for uniformity in the interpretation and enforcement of the employment agreements between Employer and its key employees. Aside from any disputes that must be resolved by arbitration as provided for in Section 14, the Snohomish County Superior Court in Washington shall have exclusive jurisdiction of any lawsuit arising from or relating to Executive's employment with, or termination from, Employer, or arising from or relating to this Agreement. Executive consents to such venue and personal jurisdiction.

25. **Counterparts.** This agreement may be executed in counterpart in different places, at different times and on different dates, and in that case all executed counterparts taken together collectively constitute a single binding agreement.

26. **Costs and Fees Related to Negotiation and Execution of Agreement.** Each Party Shall be responsible for the payment of its own costs and expenses, including legal fees and expenses, in connection with the negotiation and execution of this Agreement. Neither Party will be liable for the payment of any commissions or compensation in the nature of finders' fees or brokers' fees, gratuity or other similar thing or amount in consideration of the other Party entering into this Agreement to any broker, agent or third party acting on behalf of the other Party.

27. **Entire Agreement.** This instrument contains the entire agreement of the parties with respect to the relationship between Executive and Employer and supersedes all prior agreements and understandings, and there are no other representations or agreements other than as stated in this Agreement related to the terms and conditions of Executive's employment. This Agreement may be changed only by an agreement in writing signed by the party against whom enforcement of any waiver, change, modification, extension or discharge is sought, and any such modification will be signed by an authorized representative of Employer.

IN WITNESS WHEREOF, the parties have duly signed and delivered this Agreement as of the day and year first above written.

EMPLOYER

By:_____

Title: Chief Executive Officer

EXECUTIVE

_____

Sarah Aebersold

EXHIBIT A

DISCLOSURE OF OUTSIDE BOARD OF DIRECTORS AND TRUSTEE POSITIONS

EXHIBIT B

LIST OF INVENTIONS

AMENDED AND RESTATED EXECUTIVE EMPLOYMENT AGREEMENT

THIS AMENDED AND RESTATED EXECUTIVE EMPLOYMENT AGREEMENT (this "Agreement") is made between BioLife Solutions Inc., a Delaware corporation ("Employer" or the "Company"), and Troy Wichterman ("Executive"). Executive and the Company are sometimes referred to herein as the "Parties". The effective date of this Agreement is June 1, 2023. This Agreement supersedes and replaces all prior employment agreements (and any amendments thereto) between the Company and Executive, including, for the avoidance of doubt, the employment agreement between the Parties that became effective on November 4, 2021 and any amendments thereto.

RECITALS

A. Employer is in the business (the "Business") of manufacturing and marketing biopreservation media and cold chain products for cells, tissues, and organs.

B. Employer desires to obtain the services of Executive, in which capacity Executive has access to Employer's Confidential Information (as hereinafter defined), and to obtain assurance that Executive will protect Employer's Confidential Information and will not compete with Employer or solicit its customers or its other employees during the term of employment and for a reasonable period of time after termination of employment pursuant to this Agreement, and Executive is willing to agree to these terms.

C. Executive desires to be assured of the salary and other benefits provided for in this Agreement.

AGREEMENT

NOW, THEREFORE, in consideration of the mutual covenants herein contained, and other good and valuable consideration, the sufficiency and receipt of which are hereby acknowledged, the parties agree as follows:

1. **Employment**.

a. Employer hereby employs Executive, and Executive agrees to be employed as Chief Financial Officer ("CFO"), reporting to the Chief Executive Officer, in accordance with the terms and conditions set forth in this Agreement. Changes may be made from time to time by Employer and/or the Board in its sole discretion to the duties, authorities, reporting relationships and title of Executive.

b. Executive will devote full time, attention, and best efforts to achieving the purposes and discharging the responsibilities of the CFO. Executive will comply with all rules, policies and procedures of Employer as modified from time

to time, including without limitation, rules and procedures set forth in the Employer's employee handbook, supervisor's manuals and operating manuals. Executive will perform all of Executive's responsibilities in compliance with all applicable laws and will ensure that the operations that Executive manages are in compliance with all applicable laws. During Executive's employment, Executive will not engage in any other business activity which, in the reasonable judgment of the Employer, conflicts with the duties of Executive under this Agreement, whether or not such activity is pursued for gain, profit or other pecuniary advantage.

c. Nothing herein shall preclude Executive from: (1) continuing to serve on the board of directors or trustees of any business corporation or any charitable organization on which Executive currently serves and which is identified on Exhibit A hereto, or (2) subject to the prior approval of the Board, appointment to any additional directorships or trusteeships, or (3) serving in an advisory role for other business entities, provided in each case, and in the aggregate, that such activities do not interfere with the performance of Executive's duties hereunder or conflict with Section 7 of this Agreement.

2. **Term of Employment**. The term of employment ("Term") will not be for a definite period, but rather continue indefinitely until terminated in accordance with the terms and conditions of this Agreement.

3. **Compensation.** For the duration of Executive's employment hereunder, the Executive will be entitled to compensation which will be computed and paid pursuant to the following subparagraphs.

a. **Base Salary.** Employer will pay to Executive a base salary ("Base Salary") at an annual rate of four hundred seventy-two thousand Dollars ($472,000), payable in such installments (but in no event less than monthly), subject to withholdings and deductions as required or permitted by law, as is Employer's policy with respect to other employees. Executive's Base Salary will be reviewed periodically by the Board of Directors of Employer during the term of Executive's employment and may be adjusted in the sole discretion of the Board of Directors based on such review, but will not be reduced by Employer unless a material adverse change in the financial condition or operations of Employer has occurred or unless Executive's responsibilities are altered to reflect less responsibility.

b. **Performance Bonus.** Employer under direction of its Board may pay or cause to be paid to Executive such Bonus as it from time to time determines appropriate.

4. **Other Benefits**.

a. **Certain Benefits.** Executive will be eligible to participate in all employee benefit programs established by Employer that are applicable to management

personnel such as medical, pension, disability and life insurance plans on a basis commensurate with Executive's position and in accordance with Employer's policies from time to time, but nothing herein shall require the adoption or maintenance of any such plan.

b. **Vacations, Holidays and Expenses.** Executive will be provided accrued paid vacation of four (4) weeks each calendar year, which shall be the maximum number of days Executive may accrue at any time, and which shall be taken at such times as are consistent with Executive's responsibilities hereunder. Executive will be provided such holidays and vacation as Executive makes available to its management level employees generally. Employer will reimburse Executive in accordance with company policies and procedures for reasonable expenses necessarily incurred in the performance of duties hereunder against appropriate receipts and vouchers indicating the specific business purpose for each such expenditure. In no case shall any reimbursement be made later than December 31st of the year following the calendar year in which such expense is incurred.

c. **Right of Set-off.** By accepting this Agreement, Executive consents to a deduction from any amounts Employer owes Executive from time to time (including amounts owed to Executive as wages or other compensation, fringe benefits, or vacation pay, as well as any other amounts owed to Executive by Employer), to the extent of the amounts Executive owes to Employer. Whether or not Employer elects to make any set-off in whole or in part, if Employer does not recover by means of set-off the full amount Executive owes it, calculated as set forth above, Executive agrees to pay immediately the unpaid balance to Employer.

5. **Termination, Discharge**.

a. **For Cause.** Employer will have the right to immediately terminate Executive's services and this Agreement for Cause. "Cause" means the Employer's belief that any of the following has occurred:

(i) any breach of this Agreement by Executive, including, without limitation, breach of Executive's covenants in Sections 7, 8, 9, 10, 11 or 12;

(ii) any failure to perform assigned job responsibilities that continues unremedied for a period of ten (10) days after written notice to Executive by Employer;

(iii) Executive's malfeasance or misconduct in connection with Executive's duties hereunder or any act or omission of Executive which is materially injurious to the financial condition or business reputation of the Company or any of its subsidiaries or affiliates,

(iv) commission or conviction of a felony or misdemeanor (other than a misdemeanor traffic violation), including a plea of guilty or failure to contest prosecution for a felony or misdemeanor;

(v) the Employer's reasonable belief that Executive engaged in a violation of any statute, rule or regulation, any of which in the judgment of Employer is harmful to the Business or to Employer's reputation;

(vi) the Employer's reasonable belief that Executive engaged in unethical practices, dishonesty or disloyalty, unless Executive has evidence establishing that Employer directed Executive to commit such practice or act;

(vii) or any reason that would constitute Cause under the laws the State of Washington.

Upon termination of Executive's employment hereunder for Cause, the Company shall pay the Executive no later than fourteen (14) days from the termination date in a lump sum: (x) Executive's salary through the date of termination, (y) for any unused vacation time, and (z) for any unreimbursed business expenses that are subject to reimbursement under Employer's then current policy on business expenses. Executive will have no rights to any unvested benefits or any other compensation or payments after the termination date.

b. **Due to Death or Disability.** Employer will have the right to immediately terminate Executive's services and this Agreement due to death or disability. For purposes of this Agreement, "disability" means the incapacity or inability of Executive, whether due to accident, sickness or otherwise, as determined by a medical doctor acceptable to the Board of Directors of Employer and confirmed in writing by such doctor, to perform the essential functions of Executive's position under this Agreement, with or without reasonable accommodation (provided that no accommodation that imposes undue hardship on Employer will be required) for a period of sixty (60) consecutive days or for an aggregate of ninety (90) days during any period of twelve (12) months, or such longer period as may be required under disability law.

Upon termination of Executive's employment hereunder due to death or disability, the Company shall pay the Executive no later than fourteen (14) days from the termination date in a lump sum: (i) Executive's salary through the date of termination, (ii) a prorated portion of any incentive bonus opportunity previously approved by the Board, (iii) for any unused vacation time, and (iv) for any unreimbursed business expenses that are subject to reimbursement under Employer's then current policy on business expenses. Upon termination of Executive's employment hereunder due to death or disability, all unvested stock

options, awards, or other equity grants or awards shall immediately fully vest for the benefit of Executive's estate. Executive or Executive's estate (as the case may be) shall be entitled to receive any vested benefits required to be paid by law and any vested compensation required to be paid by law.

c. **Without Cause.** Employer may terminate Executive's employment under this Agreement without cause and without advance notice; provided, however, that Employer will pay (unless subparagraph 5.d of this Agreement applies, in which case the provisions therein shall govern), no later than fourteen (14) days from the termination date in a lump sum:

(i) (x) Executive's salary through the date of termination, (y) for any unused vacation time, and (z) for any unreimbursed business expenses that are subject to reimbursement under Employer's then current policy on business expenses.

(ii) severance pay of twelve (12) months' worth of Executive's salary at the rate in effect on the termination date.

(iii) the amount equal to the cost of twelve (12) months' medical insurance premiums at a monthly amount equal to the amount of COBRA coverage in effect as of the termination date; and

(iv) an additional tax gross up payment in an amount necessary so that the amount received by Executive to cover COBRA premiums under Section 5.c(iii) after all applicable withholding tax is deducted (using applicable supplemental wage withholding rates) is the full amount Executive would have received under Section 5.c(iii) if no tax withholding was made.

Such payments will be subject to all appropriate deductions and withholdings. Upon termination of Executive's employment hereunder due to termination without cause, all unvested stock options, awards, or other equity grants or awards shall immediately fully vest. Executive or Executive's estate (as the case may be) shall be entitled to receive any vested benefits required to be paid by law and any vested compensation required to be paid by law.

Executive shall only be entitled to such severance pay if, within thirty (30) days following the date of termination, both Employer and Executive have signed (and then Executive does not rescind, as may be permitted by law) a mutual general release of claims in a form mutually acceptable to both parties (provided, however, that such release of claims shall only require each party to release the other party from claims relating directly to Executive's employment and the termination thereof, and shall not require Executive to release claims relating to vested

employee benefits or relating to other matters, including, but not limited to, claims relating to Executive's status as a shareholder of the Company.

d. **Change in Control**.

(i) For purposes of this Agreement, Change in Control shall mean (x) the consummation of a merger or consolidation of the Company with or into another entity, (y) the dissolution, liquidation or winding up of the Company or (z) the sale of all or substantially all of the Company's assets. The foregoing notwithstanding, a merger or consolidation of the Company shall not constitute a "Change in Control" if immediately after such merger or consolidation a majority of the voting power of the capital stock of the continuing or surviving entity, or any direct or indirect parent corporation of such continuing or surviving entity, will be owned by the persons who were the Company's stockholders immediately prior to such merger or consolidation in substantially the same proportions as their ownership of the voting power of the Company's capital stock immediately prior to such merger or consolidation.

(ii) Employer may terminate Executive's employment under this Agreement or Executive may resign for Good Reason upon or within 12 months following a Change in Control without advance notice; provided, however, that Employer will pay, no later than sixty (60) days from the termination date in a lump sum:

(A) (i) Executive's salary through the date of termination, (ii) for any unused vacation time, and (iii) for any unreimbursed business expenses that are subject to reimbursement under Employer's then current policy on business expenses;

(B) as severance pay, twelve (12) months' worth of Executive's salary at the rate in effect on the termination date;

(C) 100% of any incentive cash and/or stock bonus opportunity for the current year;

(D) the amount equal to the cost of twelve (12) months' medical insurance premiums at a monthly amount equal to the amount of COBRA coverage in effect as of the termination date; and

(E) an additional tax gross up payment in an amount necessary so that the amount received by Executive to cover COBRA premiums under Section 5.d(ii)(D) after all applicable withholding tax is deducted (using applicable supplemental wage withholding rates) is

the full amount Executive would have received under Section 5.d(ii)(D) if no tax withholding was made.

(iii) Executive shall only be entitled to such severance pay if, within thirty (30) days following the date of termination, both Employer and Executive have signed (and then Executive does not rescind, as may be permitted by law) a mutual general release of claims in a form mutually acceptable to both parties (provided, however, that such release of claims shall only require each party to release the other party from claims relating directly to Executive's employment and the termination thereof, and shall not require Executive to release claims relating to vested employee benefits or relating to other matters, including, but not limited to, claims relating to Executive's status as a shareholder of the Company.

(iv) Upon termination of Executive's employment hereunder due to a Change in Control, including by Executive for Good Reason, all unvested stock options, awards, or other equity grants or awards shall immediately fully vest. Executive or Executive's estate (as the case may be) shall be entitled to receive any vested benefits required to be paid by law and any vested compensation required to be paid by law.

e. **No Fault Termination By Executive.** Executive may terminate Executive's employment under this Agreement for any reason provided that Executive gives Employer at least ninety (90) days' notice in writing. Employer may, at its option, accelerate such termination date to any date at least two weeks after Executive's notice of termination. Employer may also, at its option, relieve Executive of all duties and authority after notice of termination has been provided. Upon termination of Executive's employment in accordance with this Section, Company shall pay the Executive no later than fourteen (14) days from the termination date in a lump sum: (i) Executive's salary through the date of termination, (ii) for any unused vacation time, and (iii) for any unreimbursed business expenses that are subject to reimbursement under Employer's then current policy on business expenses. Such payments will be subject to all appropriate deductions and withholdings. Upon termination, Executive will have no rights to any unvested benefits or any other compensation.

f. **Termination By Executive for Good Reason.** Executive's employment pursuant to this Agreement shall terminate in the event Executive shall determine that there is "Good Reason" to terminate Executive's employment, which shall mean the following:

(i) Employer's material breach of the terms of this Agreement or any other written agreement between Executive and Employer; or

(ii) The occurrence of any of the following conditions, without Executive's consent:

(A) a significant diminution in the nature or scope of Executive's authority, title, function or duties;

(B) a ten percent (10%) reduction in Executive's base salary or a twenty-five percent (25%) reduction in Executive's target bonus opportunity (unless such reduction is part of a Company officer-wide program to reduce expenses);

(C) the Company's requiring Executive to be based and work out of an office or location more than 50 miles from the office where Executive is currently employed;

(D) any material breach of the terms of this Agreement by the Company; or

(E) failure of any successor or assignee to the Company to assume this Agreement.

Provided that Executive has provided with notice of the existence of a condition giving rise to "Good Reason" to terminate within ninety (90) days following the initial existence of such a condition, Employer shall have thirty (30) days to cure any such alleged breach, assignment, reduction or requirement referenced above, after Executive provides Employer written notice of the actions or omissions constituting such breach, assignment, reduction or requirement.

If Executive resigns Executive's employment for Good Reason, Executive shall be paid no later than fourteen (14) days from the termination date in a lump sum:

I. (i) Executive's salary through the date of termination, (ii) for any unused vacation time, and (iii) for any unreimbursed business expenses that are subject to reimbursement under Employer's then current policy on business expenses.

II. severance pay of twelve (12) months' worth of Executive's salary at the rate in effect on the termination date.

III. the amount equal to the cost of twelve (12) months' medical insurance premiums at a monthly amount equal to the amount of COBRA coverage in effect as of the termination date; and

IV. an additional tax gross up payment in an amount necessary so that the amount received by Executive to cover COBRA premiums under Section 5.f(III) after all applicable withholding tax is deducted (using applicable supplemental wage withholding rates) is the full amount Executive would have received under Section 5.f(III) if no tax withholding was made.

Such payments will be subject to all appropriate deductions and withholdings. Upon termination of Executive's employment hereunder due to resignation for good reason, all unvested stock options, awards, or other equity grants or awards shall immediately fully vest. Executive or Executive's estate (as the case may be) shall be entitled to receive any vested benefits required to be paid by law and any vested compensation required to be paid by law.

Executive shall only be entitled to such severance pay if, within thirty (30) days following the date of termination, both Employer and Executive have signed (and then Executive does not rescind, as may be permitted by law) a mutual general release of claims in a form mutually acceptable to both parties (provided, however, that such release of claims shall only require each party to release the other party from claims relating directly to Executive's employment and the termination thereof, and shall not require Executive to release claims relating to vested employee benefits or relating to other matters, including, but not limited to, claims relating to Executive's status as a shareholder of the Company.

6. **Return of Company Property.** Upon termination of this Agreement or upon request of the Company, Executive shall deliver to the Corporation all property, documents and materials pertaining to the Company's business including, but not limited to, memoranda, notes, records, drawings, manuals, disks, copies, representations, extracts, summaries and analyses, all inventory, demonstration units, and any other property, documents or media of the Corporation, and all equipment belonging to the company, including but not limited to corporate cards, access cards, office keys, office equipment, laptop and desktop computers, cell phones and other wireless devices, thumb drives, zip drives and all other media storage devices.

7. **Covenant Not To Compete.** During Executive's employment by Employer and for a period expiring one (1) year after the termination of Executive's employment for any reason, Executive covenants and agrees that Executive will not:

a. Directly, indirectly, or otherwise, own, manage, operate, control, serve as a consultant to, be employed by, participate in, or be connected, in any manner, with the ownership, management, operation or control of any business that competes with the Business or that competes with Employer or any of its affiliates or that is engaged in any type of business which, at any time during Executive's employment with Employer, Employer or any of its affiliates planned to develop;

b. Hire, offer to hire, entice away or in any other manner persuade or attempt to persuade any officer, employee or agent of Employer or any of its affiliates to alter or discontinue a relationship with Employer or to do any act that is inconsistent with the interests of Employer or any of its affiliates;

c. Directly or indirectly solicit, divert, take away or attempt to solicit, divert or take away any customers of Employer or any of its affiliates; or

d. Directly or indirectly solicit, divert, or in any other manner persuade or attempt to persuade any supplier of Employer or any of its affiliates to alter or discontinue its relationship with Employer or any of its affiliates.

For the purposes of this Section 7, businesses that are deemed to compete with Employer include, without limitation, businesses engaged in manufacturing and marketing biopreservation media for cells, tissues, and organs or cold chain management products and/or services. The geographic scope of the prohibitions in this Section 7 shall be any city, town or county in which the Company conducts or does any business as of or within one (1) year of Executive's last day of employment with the Company. Notwithstanding Executive's obligations under this Section 7, Executive will be entitled to own, as a passive investor, up to five percent (5%) of any publicly traded company without violating this provision.

Employer and Executive agree that: this provision does not impose an undue hardship on Executive and is not injurious to the public; that this provision is necessary to protect the business of Employer and its affiliates; the nature of Executive's responsibilities with Employer under this Agreement require Executive to have access to confidential information which is valuable and confidential to all of the Business; the scope of this Section 7 is reasonable in terms of length of time and geographic scope; and adequate consideration supports this Section 7, including consideration herein.

8. **Confidential Information.** Executive recognizes that Employer's business and continued success depend upon the use and protection of confidential and proprietary business information, including, without limitation, the information and technology developed by or available through licenses to Employer, to which Executive has access (all such information being "Confidential Information"). For purposes of this Agreement, the phrase "Confidential Information" includes, for Employer and its current or future subsidiaries and affiliates, without limitation, and whether or not specifically designated as confidential or proprietary: all business plans and marketing strategies; information concerning existing and prospective markets and customers; financial information; information concerning the development of new products and services; information concerning any personnel of Employer (including, without limitation, skills and compensation information); intellectual property; and technical and non-technical data related to software programs, designs, specifications, compilations, inventions, improvements, methods, processes, procedures and techniques; provided, however, that the phrase does not include information that (a) was lawfully in Executive's possession prior

to disclosure of such information by Employer; (b) was, or at any time becomes, available in the public domain other than through a violation of this Agreement; (c) is documented by Executive as having been developed by Executive outside the scope of Executive's employment and independently; or (d) is furnished to Executive by a third party not under an obligation of confidentiality to Employer. Executive agrees that during Executive's employment and after termination of employment irrespective of cause, Executive will use Confidential Information only (i) while employed by the Company, in the business of and for the benefit of the Company, or (ii) when required to do so by a court of competent jurisdiction, by any governmental agency having supervisory authority over the business of the Company, or by any administrative body or legislative body (including a committee thereof) with jurisdiction to order Executive to divulge, disclose or make accessible such information, and then only after providing written notice to Employer that such a demand has been made. Executive's obligation under this Agreement is in addition to any obligations Executive has under state or federal law. Executive agrees to deliver to Employer immediately upon termination of Executive's employment, or at any time Employer so requests, all tangible items containing any Confidential Information (including, without limitation, all memoranda, photographs, records, reports, manuals, drawings, blueprints, prototypes, notes taken by or provided to Executive, and any other documents or items of a confidential nature belonging to Employer), together with all copies of such material in Executive's possession or control. Executive agrees that in the course of Executive's employment with Employer, Executive will not violate in any way the rights that any entity has with regard to trade secrets or proprietary or confidential information. Executive's obligations under this Section 8 are indefinite in term and shall survive the termination of this Agreement.

9. **Work Product and Copyrights.** Executive agrees that all right, title and interest in and to the materials resulting from the performance of Executive's duties at Employer and all copies thereof, including works in progress, in whatever media, (the "Work"), will be and remain in Employer upon their creation. Executive will mark all Work with Employer's copyright or other proprietary notice as directed by Employer. Executive further agrees:

a. To the extent that any portion of the Work constitutes a work protectable under the copyright laws of the United States (the "Copyright Law"), that all such Work will be considered a "work made for hire" as such term is used and defined in the Copyright Law, and that Employer will be considered the "author" of such portion of the Work and the sole and exclusive owner throughout the world of copyright therein; and

b. If any portion of the Work does not qualify as a "work made for hire" as such term is used and defined in the Copyright Law, that Executive hereby assigns and agrees to assign to Employer, without further consideration, all right, title and interest in and to such Work or in any such portion thereof and any copyright therein and further agrees to execute and deliver to Employer, upon request, appropriate assignments of such Work and copyright therein and such other documents and instruments as Employer may request to fully and completely assign such Work

and copyright therein to Employer, its successors or nominees, and that Executive hereby appoints Employer as attorney-in-fact to execute and deliver any such documents on Executive's behalf in the event Executive should fail or refuse to do so within a reasonable period following Employer's request.

10. **Inventions and Patents.** For purposes of this Agreement, "Inventions" includes, without limitation, information, inventions, contributions, improvements, ideas, or discoveries, whether protectable or not, and whether or not conceived or made during work hours. Executive agrees that all Inventions conceived or made by Executive during the period of employment with Employer belong to Employer, provided they grow out of Executive's work with Employer or are related in some manner to the Business, including, without limitation, research and product development, and projected business of Employer or its affiliated companies. Accordingly, Executive will:

a. Make adequate written records of such Inventions, which records will be Employer's property;

b. Assign to Employer, at its request, any rights Executive may have to such Inventions for the U.S. and all foreign countries;

c. Waive and agree not to assert any moral rights Executive may have or acquire in any Inventions and agree to provide written waivers from time to time as requested by Employer; and

d. Assist Employer (at Employer's expense) in obtaining and maintaining patents or copyright registrations with respect to such Inventions.

Executive understands and agrees that Employer or its designee will determine, in its sole and absolute discretion, whether an application for patent will be filed on any Invention that is the exclusive property of Employer, as set forth above, and whether such an application will be abandoned prior to issuance of a patent. Employer will pay to Executive, either during or after the term of this Agreement, the following amounts if Executive is sole inventor, or Executive's proportionate share if Executive is joint inventor: $750 upon filing of the initial application for patent on such Invention; and $1,500 upon issuance of a patent resulting from such initial patent application, provided Executive is named as an inventor in the patent.

Executive further agrees that Executive will promptly disclose in writing to Employer during the term of Executive's employment and for one (1) year thereafter, all Inventions whether developed during the time of such employment or thereafter (whether or not Employer has rights in such Inventions) so that Executive's rights and Employer's rights in such Inventions can be determined. Except as set forth on the initialed Exhibit B (List of Inventions) to this Agreement, if any, Executive represents and warrants that Executive has no Inventions, software, writings or other works of authorship useful to Employer in

the normal course of the Business, which were conceived, made or written prior to the date of this Agreement and which are excluded from the operation of this Agreement.

NOTICE: In accordance with Washington law, this Section 10 does not apply to Inventions for which no equipment, supplies, facility, or trade secret information of Employer was used and which was developed entirely on Executive's own time, unless: (a) the Invention relates (i) directly to the business of Employer or (ii) to Employer's actual or demonstrably anticipated research or development, or (b) the Invention results from any work performed by Executive for Employer.

11. **Cooperation.** The parties agree that certain matters in which Executive will be involved during the Term may necessitate Executive's cooperation in the future. Accordingly, following the termination of Executive's employment for any reason, to the extent reasonably requested by the Board, Executive shall cooperate with the Employer in connection with matters arising out of Executive's service to the Employer; provided that, the Employer shall make reasonable efforts to minimize disruption of Executive's other activities. The Employer shall reimburse Executive for reasonable expenses incurred in connection with such cooperation.

12. **Non-Disparagement.** Executive agrees and covenants that Executive will not at any time make, publish or communicate to any person or entity or in any public forum any defamatory or disparaging remarks, comments, or statements concerning the Employer or its businesses, or any of its employees, officers, and existing and prospective customers, suppliers, investors and other associated third parties. This Section 12 does not, in any way, restrict or impede Executive from exercising protected rights to the extent that such rights cannot be waived by agreement or from complying with any applicable law or regulation or a valid order of a court of competent jurisdiction or an authorized government agency, provided that such compliance does not exceed that required by the law, regulation, or order. The Executive shall promptly provide written notice of any such order to the Chief Executive Officer.

13. **Remedies.** Notwithstanding other provisions of this Agreement regarding dispute resolution, Executive agrees that Executive's violation of any of Sections 7, 8, 9, 10, 11 or 12 of this Agreement would cause Employer irreparable harm which would not be adequately compensated by monetary damages and that an injunction may be granted by any court or courts having jurisdiction, restraining Executive from violation of the terms of this Agreement, upon any breach or threatened breach of Executive of the obligations set forth in any of Sections 7, 8, 9, 10, 11 or 12. The preceding sentence shall not be construed to limit Employer from any other relief or damages to which it may be entitled as a result of Executive's breach of any provision of this Agreement, including Sections 7, 8, 9, 10, 11 or 12. Executive also agrees that a violation of any of Sections 7, 8, 9, 10, 11 or 12 would entitle Employer, in addition to all other remedies available at law or equity, to recover from Executive any and all funds, including, without limitation, wages, salary and profits, which will be held by Executive in constructive trust for Employer, received by Executive in connection with such violation.

14. **Dispute Resolution.** Except for the right of Employer and Executive to seek injunctive relief in court, any controversy, claim or dispute of any type arising out of or relating to Executive's employment or the provisions of this Agreement shall be resolved in accordance with this Section 14 regarding resolution of disputes, which will be the sole and exclusive procedure for the resolution of any disputes. This Agreement shall be enforced in accordance with the Federal Arbitration Act, the enforcement provisions of which are incorporated by this reference. Matters subject to these provisions include, without limitation, claims or disputes based on statute, contract, common law and tort and will include, for example, matters pertaining to termination, discrimination, harassment, compensation and benefits. Matters to be resolved under these procedures also include claims and disputes arising out of statutes such as the Fair Labor Standards Act, Title VII of the Civil Rights Act, the Age Discrimination in Employment Act, the Washington Minimum Wage Act, and the Washington Law Against Discrimination. Nothing in this provision is intended to restrict Executive from submitting any matter to an administrative agency with jurisdiction over such matter.

a. **Mediation.** Employer and Executive will make a good faith attempt to resolve any and all claims and disputes by submitting them to mediation in Snohomish County, Washington before resorting to arbitration or any other dispute resolution procedure. The mediation of any claim or dispute must be conducted in accordance with the then-current JAMS procedures for the resolution of employment disputes by mediation, by a mediator who has had both training and experience as a mediator of general employment and commercial matters. If the parties to this Agreement cannot agree on a mediator, then the mediator will be selected by JAMS in accordance with JAMS' strike list method. Within thirty (30) days after the selection of the mediator, Employer and Executive and their respective attorneys will meet with the mediator for one mediation session of at least four hours. If the claim or dispute cannot be settled during such mediation session or mutually agreed continuation of the session, either Employer or Executive may give the mediator and the other party to the claim or dispute written notice declaring the end of the mediation process. All discussions connected with this mediation provision will be confidential and treated as compromise and settlement discussions. Nothing disclosed in such discussions, which is not independently discoverable, may be used for any purpose in any later proceeding. The mediator's fees will be paid in equal portions by Employer and Executive, unless Employer agrees to pay all such fees.

b. **Arbitration.** If any claim or dispute has not been resolved in accordance with Section 14.a., then the claim or dispute will be determined by arbitration in accordance with the then-current JAMS employment arbitration rules and procedures, except as modified herein. The arbitration will be conducted by a sole neutral arbitrator who has had both training and experience as an arbitrator of general employment and commercial matters and who is and for at least ten (10) years has been, a partner, a shareholder, or a member in a law firm. The arbitration shall be held in Snohomish County, Washington. If Employer and Executive cannot agree on an arbitrator, then the arbitrator will be selected by JAMS in accordance

with Rule 15 of the JAMS employment arbitration rules and procedures. No person who has served as a mediator under the mediation provision, however, may be selected as the arbitrator for the same claim or dispute. Reasonable discovery will be permitted and the arbitrator may decide any issue as to discovery. The arbitrator may decide any issue as to whether or as to the extent to which any dispute is subject to the dispute resolution provisions in Section 14 and the arbitrator may award any relief permitted by law. The arbitrator must base the arbitration award on the provisions of Section 14 and applicable law and must render the award in writing, including an explanation of the reasons for the award. Judgment upon the award may be entered by any court having jurisdiction of the matter, and the decision of the arbitrator will be final and binding. The statute of limitations applicable to the commencement of a lawsuit will apply to the commencement of an arbitration under Section 14.b. The arbitrator's fees will be paid in equal portions by Employer and Executive, unless Employer agrees to pay all such fees.

15. **Fees Related to Dispute Resolution.** Unless otherwise agreed, the prevailing party will be entitled to its costs and attorneys' fees incurred in any litigation or dispute relating to the interpretation or enforcement of this Agreement.

16. **409A**. It is intended that any payment or benefit that is provided pursuant to or in connection with this Agreement that is considered to be deferred compensation subject to Section 409A of the Internal Revenue Code of 1986, as amended ("Code") shall be paid and provided in a manner, and at such time and form, as complies with the applicable requirements of Section 409A of the Code to avoid the unfavorable tax consequences provided therein for non-compliance. It is further intended that the payments hereunder shall, to the maximum extent permissible under Section 409A of the Code, be exempt from Section 409A of the Code under either (i) the exception for involuntary separation pay to the extent that all payments are payable within the limitations described in Treasury Regulation Section 1.409A-1(b)(9), or (ii) the short-term deferral exception described in Treasury Regulation Section 1.409A-1(b)(4) to the extent that all payments are payable no later than two and a half months after the end of the first taxable year in which the right to the payment is no longer subject to a substantial risk of forfeiture.

a. If the Executive is a "specified employee" for purposes of Section 409A(a)(2)(B)(i) of the Code at such time, any payments to be made or benefits to be delivered in connection with the Executive's "Separation from Service" (as defined below) that constitute deferred compensation subject to Section 409A of the Code shall not be made until six months plus one day after the Executive's Separation from Service (the "409A Deferral Period") as required by Section 409A of the Code, provided that the payment of any such deferred compensation may be paid immediately following the Executive's death. Payments of any such deferred compensation otherwise due to be made in installments or periodically during the 409A Deferral Period shall be accumulated and paid in a lump sum as soon as the 409A Deferral Period ends, and the balance of the payment shall be made as otherwise scheduled.

b. For purposes of this Agreement, all rights to payments and benefits hereunder shall be treated as rights to receive a series of separate payments and benefits to the fullest extent allowed by Section 409A of the Code.

c. For purposes of this Agreement, with respect to the timing of any amounts that constitute deferred compensation subject to Section 409A of the Code that depends on termination of employment or separation from service, termination of employment or separation from service shall mean a "separation from service" within the meaning of Section 409A of the Code where it is reasonably anticipated that no further services would be performed after such date or that the level of bona fide services the Executive would perform after that date (whether as an employee or independent contractor) would permanently decrease to a level less than or equal to twenty percent (20%) of the average level of bona fide services the Executive performed over the immediately preceding thirty-six (36) month period.

17. **Disclosure.** Executive agrees fully and completely to reveal the terms of this Agreement to any future employer or potential employer of Executive and authorizes Employer, at its election, to make such disclosure.

18. **Representation of Executive.** Executive represents and warrants to Employer that Executive is free to enter into this Agreement and has no contract, commitment, arrangement or understanding to or with any party that restrains or is in conflict with Executive's performance of the covenants, services and duties provided for in this Agreement, and is not contravene the terms of any statute, law, or regulation to which Executive is subject. Executive agrees to indemnify Employer and to hold it harmless against any and all liabilities or claims arising out of any unauthorized act or acts by Executive that, the foregoing representation and warranty to the contrary notwithstanding, are in violation, or constitute a breach, of any such contract, commitment, arrangement or understanding.

19. **Conditions of Employment.** Employer's obligations to Executive under this Agreement are conditioned upon Executive's timely compliance with requirements of the United States immigration laws.

20. **Assignability.** This Agreement shall not be assignable by Executive. This Agreement may be assigned by the Company to a company which is a successor in interest to substantially all of the business operations of the Company. Such assignment shall become effective when the Company notifies the Executive of such assignment or at such later date as may be specified in such notice. Upon such assignment, the rights and obligations of the Company hereunder shall become the rights and obligations of such successor company, provided that any assignee expressly assumes the obligations, rights and privileges of this Agreement.

21. **Notices.** Any notices required or permitted to be given hereunder are sufficient if in writing and delivered by hand, by facsimile, by registered or certified mail,

postage prepaid, or by overnight courier, to Executive at Executive's home address as most recently updated in Executive's Human Resources records, or to BioLife Solutions, Inc., 3303 Monte Villa Parkway, #310, Bothell, WA 98021, Attention: Chief Executive Officer. Notices shall be deemed to have been given (i) upon delivery, if delivered by hand or by email, (ii) seven days after mailing, if mailed, (iii) one business day after delivery, if delivered by courier, and (iv) one business day following receipt of an appropriate electronic confirmation, if by facsimile.

22. **Severability**. If any provision of this Agreement or compliance by any of the parties with any provision of this Agreement constitutes a violation of any law, or is or becomes unenforceable or void, then such provision, to the extent only that it is in violation of law, unenforceable or void, shall be deemed modified to the extent necessary so that it is no longer in violation of law, unenforceable or void, and such provision will be enforced to the fullest extent permitted by law. The Parties shall engage in good faith negotiations to modify and replace any provision which is declared invalid or unenforceable with a valid and enforceable provision, the economic effect of which comes as close as possible to that of the invalid or unenforceable provision which it replaces. If such modification is not possible, said provision, to the extent that it is in violation of law, unenforceable or void, shall be deemed severable from the remaining provisions of this Agreement, which provisions will remain binding on the parties.

23. **Waivers**. No failure on the part of either party to exercise, and no delay in exercising, any right or remedy hereunder will operate as a waiver thereof; nor will any single or partial waiver of a breach of any provision of this Agreement operate or be construed as a waiver of any subsequent breach; nor will any single or partial exercise of any right or remedy hereunder preclude any other or further exercise thereof or the exercise of any other right or remedy granted hereby or by law.

24. **Governing Law.** Except as provided in Section 14 above, the validity, construction and performance of this Agreement shall be governed by the laws of the State of Washington without regard to the conflicts of law provisions of such laws. The parties hereto expressly recognize and agree that the implementation of this Section 24 is essential in light of the fact that Employer has its corporate headquarters and its principal executive offices within the State of Washington, and there is a critical need for uniformity in the interpretation and enforcement of the employment agreements between Employer and its key employees. Aside from any disputes that must be resolved by arbitration as provided for in Section 14, the Snohomish County Superior Court in Washington shall have exclusive jurisdiction of any lawsuit arising from or relating to Executive's employment with, or termination from, Employer, or arising from or relating to this Agreement. Executive consents to such venue and personal jurisdiction.

25. **Counterparts.** This agreement may be executed in counterpart in different places, at different times and on different dates, and in that case all executed counterparts taken together collectively constitute a single binding agreement.

26. **Costs and Fees Related to Negotiation and Execution of Agreement.** Each Party Shall be responsible for the payment of its own costs and expenses, including legal fees and expenses, in connection with the negotiation and execution of this Agreement. Neither Party will be liable for the payment of any commissions or compensation in the nature of finders' fees or brokers' fees, gratuity or other similar thing or amount in consideration of the other Party entering into this Agreement to any broker, agent or third party acting on behalf of the other Party.

27. **Entire Agreement.** This instrument contains the entire agreement of the parties with respect to the relationship between Executive and Employer and supersedes all prior agreements and understandings, and there are no other representations or agreements other than as stated in this Agreement related to the terms and conditions of Executive's employment. This Agreement may be changed only by an agreement in writing signed by the party against whom enforcement of any waiver, change, modification, extension or discharge is sought, and any such modification will be signed by an authorized representative of Employer.

IN WITNESS WHEREOF, the parties have duly signed and delivered this Agreement as of the day and year first above written.

EMPLOYER

By: _____

Title: Chief Executive Officer

EXECUTIVE

_____

Troy Wichterman

EXHIBIT A

DISCLOSURE OF OUTSIDE BOARD OF DIRECTORS AND TRUSTEE POSITIONS

EXHIBIT B

LIST OF INVENTIONS

AMENDED AND RESTATED EXECUTIVE EMPLOYMENT AGREEMENT

THIS AMENDED AND RESTATED EXECUTIVE EMPLOYMENT AGREEMENT (this "Agreement") is made between BioLife Solutions Inc., a Delaware corporation ("Employer" or the "Company"), and Geraint Phillips ("Executive"). Executive and the Company are sometimes referred to herein as the "Parties". The effective date of this Agreement is June 1, 2023. This Agreement supersedes and replaces all prior employment agreements (and any amendments thereto) between the Company and Executive, including, for the avoidance of doubt, the employment agreement between the Parties that became effective on November 9, 2021 and any amendments thereto.

RECITALS

A. Employer is in the business (the "Business") of manufacturing and marketing biopreservation media and cold chain products for cells, tissues, and organs.

B. Employer desires to obtain the services of Executive, in which capacity Executive has access to Employer's Confidential Information (as hereinafter defined), and to obtain assurance that Executive will protect Employer's Confidential Information and will not compete with Employer or solicit its customers or its other employees during the term of employment and for a reasonable period of time after termination of employment pursuant to this Agreement, and Executive is willing to agree to these terms.

C. Executive desires to be assured of the salary and other benefits provided for in this Agreement.

AGREEMENT

NOW, THEREFORE, in consideration of the mutual covenants herein contained, and other good and valuable consideration, the sufficiency and receipt of which are hereby acknowledged, the parties agree as follows:

1. **Employment**.

a. Employer hereby employs Executive, and Executive agrees to be employed as Senior Vice President, Global Operations, reporting to the Chief Executive Officer, in accordance with the terms and conditions set forth in this Agreement. Changes may be made from time to time by Employer and/or the Board in its sole discretion to the duties, authorities, reporting relationships and title of Executive.

b. Executive will devote full time, attention, and best efforts to achieving the purposes and discharging the responsibilities of the position of Senior Vice

President, Global Operations. Executive will comply with all rules, policies and procedures of Employer as modified from time to time, including without limitation, rules and procedures set forth in the Employer's employee handbook, supervisor's manuals and operating manuals. Executive will perform all of Executive's responsibilities in compliance with all applicable laws and will ensure that the operations that Executive manages are in compliance with all applicable laws. During Executive's employment, Executive will not engage in any other business activity which, in the reasonable judgment of the Employer, conflicts with the duties of Executive under this Agreement, whether or not such activity is pursued for gain, profit or other pecuniary advantage.

c. Nothing herein shall preclude Executive from: (1) continuing to serve on the board of directors or trustees of any business corporation or any charitable organization on which Executive currently serves and which is identified on Exhibit A hereto, or (2) subject to the prior approval of the Board, appointment to any additional directorships or trusteeships, or (3) serving in an advisory role for other business entities, provided in each case, and in the aggregate, that such activities do not interfere with the performance of Executive's duties hereunder or conflict with Section 7 of this Agreement.

2. **Term of Employment**. The term of employment ("Term") will not be for a definite period, but rather continue indefinitely until terminated in accordance with the terms and conditions of this Agreement.

3. **Compensation.** For the duration of Executive's employment hereunder, the Executive will be entitled to compensation which will be computed and paid pursuant to the following subparagraphs.

a. **Base Salary.** Employer will pay to Executive a base salary ("Base Salary") at an annual rate of three hundred eighty thousand Dollars ($380,000), payable in such installments (but in no event less than monthly), subject to withholdings and deductions as required or permitted by law, as is Employer's policy with respect to other employees. Executive's Base Salary will be reviewed periodically by the Board of Directors of Employer during the term of Executive's employment and may be adjusted in the sole discretion of the Board of Directors based on such review, but will not be reduced by Employer unless a material adverse change in the financial condition or operations of Employer has occurred or unless Executive's responsibilities are altered to reflect less responsibility.

b. **Performance Bonus.** Employer under direction of its Board may pay or cause to be paid to Executive such Bonus as it from time to time determines appropriate.

4. **Other Benefits**.

a. **Certain Benefits.** Executive will be eligible to participate in all employee benefit programs established by Employer that are applicable to management personnel such as medical, pension, disability and life insurance plans on a basis commensurate with Executive's position and in accordance with Employer's policies from time to time, but nothing herein shall require the adoption or maintenance of any such plan.

b. **Vacations, Holidays and Expenses.** Executive will be provided accrued paid vacation of four (4) weeks each calendar year, which shall be the maximum number of days Executive may accrue at any time, and which shall be taken at such times as are consistent with Executive's responsibilities hereunder. Executive will be provided such holidays and vacation as Executive makes available to its management level employees generally. Employer will reimburse Executive in accordance with company policies and procedures for reasonable expenses necessarily incurred in the performance of duties hereunder against appropriate receipts and vouchers indicating the specific business purpose for each such expenditure. In no case shall any reimbursement be made later than December 31st of the year following the calendar year in which such expense is incurred.

c. **Right of Set-off.** By accepting this Agreement, Executive consents to a deduction from any amounts Employer owes Executive from time to time (including amounts owed to Executive as wages or other compensation, fringe benefits, or vacation pay, as well as any other amounts owed to Executive by Employer), to the extent of the amounts Executive owes to Employer. Whether or not Employer elects to make any set-off in whole or in part, if Employer does not recover by means of set-off the full amount Executive owes it, calculated as set forth above, Executive agrees to pay immediately the unpaid balance to Employer.

5. **Termination, Discharge**.

a. **For Cause.** Employer will have the right to immediately terminate Executive's services and this Agreement for Cause. "Cause" means the Employer's belief that any of the following has occurred:

(i) any breach of this Agreement by Executive, including, without limitation, breach of Executive's covenants in Sections 7, 8, 9, 10, 11 or 12;

(ii) any failure to perform assigned job responsibilities that continues unremedied for a period of ten (10) days after written notice to Executive by Employer;

(iii) Executive's malfeasance or misconduct in connection with Executive's duties hereunder or any act or omission of Executive

which is materially injurious to the financial condition or business reputation of the Company or any of its subsidiaries or affiliates,

(iv) commission or conviction of a felony or misdemeanor (other than a misdemeanor traffic violation), including a plea of guilty or failure to contest prosecution for a felony or misdemeanor;

(v) the Employer's reasonable belief that Executive engaged in a violation of any statute, rule or regulation, any of which in the judgment of Employer is harmful to the Business or to Employer's reputation;

(vi) the Employer's reasonable belief that Executive engaged in unethical practices, dishonesty or disloyalty, unless Executive has evidence establishing that Employer directed Executive to commit such practice or act;

(vii) or any reason that would constitute Cause under the laws the State of Washington.

Upon termination of Executive's employment hereunder for Cause, the Company shall pay the Executive no later than fourteen (14) days from the termination date in a lump sum: (x) Executive's salary through the date of termination, (y) for any unused vacation time, and (z) for any unreimbursed business expenses that are subject to reimbursement under Employer's then current policy on business expenses. Executive will have no rights to any unvested benefits or any other compensation or payments after the termination date.

b. **Due to Death or Disability.** Employer will have the right to immediately terminate Executive's services and this Agreement due to death or disability. For purposes of this Agreement, "disability" means the incapacity or inability of Executive, whether due to accident, sickness or otherwise, as determined by a medical doctor acceptable to the Board of Directors of Employer and confirmed in writing by such doctor, to perform the essential functions of Executive's position under this Agreement, with or without reasonable accommodation (provided that no accommodation that imposes undue hardship on Employer will be required) for a period of sixty (60) consecutive days or for an aggregate of ninety (90) days during any period of twelve (12) months, or such longer period as may be required under disability law.

Upon termination of Executive's employment hereunder due to death or disability, the Company shall pay the Executive no later than fourteen (14) days from the termination date in a lump sum: (i) Executive's salary through the date of termination, (ii) a prorated portion of any incentive bonus opportunity previously approved by the Board, (iii) for any unused vacation time, and (iv) for any

unreimbursed business expenses that are subject to reimbursement under Employer's then current policy on business expenses. Upon termination of Executive's employment hereunder due to death or disability, all unvested stock options, awards, or other equity grants or awards shall immediately fully vest for the benefit of Executive's estate. Executive or Executive's estate (as the case may be) shall be entitled to receive any vested benefits required to be paid by law and any vested compensation required to be paid by law.

c. **Without Cause.** Employer may terminate Executive's employment under this Agreement without cause and without advance notice; provided, however, that Employer will pay (unless subparagraph 5.d of this Agreement applies, in which case the provisions therein shall govern), no later than fourteen (14) days from the termination date in a lump sum:

(i) (x) Executive's salary through the date of termination, (y) for any unused vacation time, and (z) for any unreimbursed business expenses that are subject to reimbursement under Employer's then current policy on business expenses.

(ii) severance pay of twelve (12) months' worth of Executive's salary at the rate in effect on the termination date.

(iii) the amount equal to the cost of twelve (12) months' medical insurance premiums at a monthly amount equal to the amount of COBRA coverage in effect as of the termination date; and

(iv) an additional tax gross up payment in an amount necessary so that the amount received by Executive to cover COBRA premiums under Section 5.c(iii) after all applicable withholding tax is deducted (using applicable supplemental wage withholding rates) is the full amount Executive would have received under Section 5.c(iii) if no tax withholding was made.

Such payments will be subject to all appropriate deductions and withholdings. Upon termination of Executive's employment hereunder due to termination without cause, all unvested stock options, awards, or other equity grants or awards shall immediately fully vest. Executive or Executive's estate (as the case may be) shall be entitled to receive any vested benefits required to be paid by law and any vested compensation required to be paid by law.

Executive shall only be entitled to such severance pay if, within thirty (30) days following the date of termination, both Employer and Executive have signed (and then Executive does not rescind, as may be permitted by law) a mutual general release of claims in a form mutually acceptable to both parties (provided, however, that such release of claims shall only require each party to release the other party

from claims relating directly to Executive's employment and the termination thereof, and shall not require Executive to release claims relating to vested employee benefits or relating to other matters, including, but not limited to, claims relating to Executive's status as a shareholder of the Company.

d. **Change in Control**.

(i) For purposes of this Agreement, Change in Control shall mean (x) the consummation of a merger or consolidation of the Company with or into another entity, (y) the dissolution, liquidation or winding up of the Company or (z) the sale of all or substantially all of the Company's assets. The foregoing notwithstanding, a merger or consolidation of the Company shall not constitute a "Change in Control" if immediately after such merger or consolidation a majority of the voting power of the capital stock of the continuing or surviving entity, or any direct or indirect parent corporation of such continuing or surviving entity, will be owned by the persons who were the Company's stockholders immediately prior to such merger or consolidation in substantially the same proportions as their ownership of the voting power of the Company's capital stock immediately prior to such merger or consolidation.

(ii) Employer may terminate Executive's employment under this Agreement or Executive may resign for Good Reason upon or within 12 months following a Change in Control without advance notice; provided, however, that Employer will pay, no later than sixty (60) days from the termination date in a lump sum:

(A) (i) Executive's salary through the date of termination, (ii) for any unused vacation time, and (iii) for any unreimbursed business expenses that are subject to reimbursement under Employer's then current policy on business expenses;

(B) as severance pay, twelve (12) months' worth of Executive's salary at the rate in effect on the termination date;

(C) 100% of any incentive cash and/or stock bonus opportunity for the current year;

(D) the amount equal to the cost of twelve (12) months' medical insurance premiums at a monthly amount equal to the amount of COBRA coverage in effect as of the termination date; and

(E) an additional tax gross up payment in an amount necessary so that the amount received by Executive to cover COBRA premiums

under Section 5.d(ii)(D) after all applicable withholding tax is deducted (using applicable supplemental wage withholding rates) is the full amount Executive would have received under Section 5.d(ii)(D) if no tax withholding was made.

(iii) Executive shall only be entitled to such severance pay if, within thirty (30) days following the date of termination, both Employer and Executive have signed (and then Executive does not rescind, as may be permitted by law) a mutual general release of claims in a form mutually acceptable to both parties (provided, however, that such release of claims shall only require each party to release the other party from claims relating directly to Executive's employment and the termination thereof, and shall not require Executive to release claims relating to vested employee benefits or relating to other matters, including, but not limited to, claims relating to Executive's status as a shareholder of the Company.

(iv) Upon termination of Executive's employment hereunder due to a Change in Control, including by Executive for Good Reason, all unvested stock options, awards, or other equity grants or awards shall immediately fully vest. Executive or Executive's estate (as the case may be) shall be entitled to receive any vested benefits required to be paid by law and any vested compensation required to be paid by law.

e. **No Fault Termination By Executive.** Executive may terminate Executive's employment under this Agreement for any reason provided that Executive gives Employer at least ninety (90) days' notice in writing. Employer may, at its option, accelerate such termination date to any date at least two weeks after Executive's notice of termination. Employer may also, at its option, relieve Executive of all duties and authority after notice of termination has been provided. Upon termination of Executive's employment in accordance with this Section, Company shall pay the Executive no later than fourteen (14) days from the termination date in a lump sum: (i) Executive's salary through the date of termination, (ii) for any unused vacation time, and (iii) for any unreimbursed business expenses that are subject to reimbursement under Employer's then current policy on business expenses. Such payments will be subject to all appropriate deductions and withholdings. Upon termination, Executive will have no rights to any unvested benefits or any other compensation.

f. **Termination By Executive for Good Reason.** Executive's employment pursuant to this Agreement shall terminate in the event Executive shall determine that there is "Good Reason" to terminate Executive's employment, which shall mean the following:

(i) Employer's material breach of the terms of this Agreement or any other written agreement between Executive and Employer; or

(ii) The occurrence of any of the following conditions, without Executive's consent:

(A) a significant diminution in the nature or scope of Executive's authority, title, function or duties;

(B) a ten percent (10%) reduction in Executive's base salary or a twenty-five percent (25%) reduction in Executive's target bonus opportunity (unless such reduction is part of a Company officer-wide program to reduce expenses);

(C) the Company's requiring Executive to be based and work out of an office or location more than 50 miles from the office where Executive is currently employed;

(D) any material breach of the terms of this Agreement by the Company; or

(E) failure of any successor or assignee to the Company to assume this Agreement.

Provided that Executive has provided with notice of the existence of a condition giving rise to "Good Reason" to terminate within ninety (90) days following the initial existence of such a condition, Employer shall have thirty (30) days to cure any such alleged breach, assignment, reduction or requirement referenced above, after Executive provides Employer written notice of the actions or omissions constituting such breach, assignment, reduction or requirement.

If Executive resigns Executive's employment for Good Reason, Executive shall be paid no later than fourteen (14) days from the termination date in a lump sum:

I. (i) Executive's salary through the date of termination, (ii) for any unused vacation time, and (iii) for any unreimbursed business expenses that are subject to reimbursement under Employer's then current policy on business expenses.

II. severance pay of twelve (12) months' worth of Executive's salary at the rate in effect on the termination date.

III. the amount equal to the cost of twelve (12) months' medical insurance premiums at a monthly amount equal to the amount of COBRA coverage in effect as of the termination date; and

IV. an additional tax gross up payment in an amount necessary so that the amount received by Executive to cover COBRA premiums under Section 5.f(III) after all applicable withholding tax is deducted (using applicable supplemental wage withholding rates) is the full amount Executive would have received under Section 5.f(III) if no tax withholding was made.

Such payments will be subject to all appropriate deductions and withholdings. Upon termination of Executive's employment hereunder due to resignation for good reason, all unvested stock options, awards, or other equity grants or awards shall immediately fully vest. Executive or Executive's estate (as the case may be) shall be entitled to receive any vested benefits required to be paid by law and any vested compensation required to be paid by law.

Executive shall only be entitled to such severance pay if, within thirty (30) days following the date of termination, both Employer and Executive have signed (and then Executive does not rescind, as may be permitted by law) a mutual general release of claims in a form mutually acceptable to both parties (provided, however, that such release of claims shall only require each party to release the other party from claims relating directly to Executive's employment and the termination thereof, and shall not require Executive to release claims relating to vested employee benefits or relating to other matters, including, but not limited to, claims relating to Executive's status as a shareholder of the Company.

6. **Return of Company Property.** Upon termination of this Agreement or upon request of the Company, Executive shall deliver to the Corporation all property, documents and materials pertaining to the Company's business including, but not limited to, memoranda, notes, records, drawings, manuals, disks, copies, representations, extracts, summaries and analyses, all inventory, demonstration units, and any other property, documents or media of the Corporation, and all equipment belonging to the company, including but not limited to corporate cards, access cards, office keys, office equipment, laptop and desktop computers, cell phones and other wireless devices, thumb drives, zip drives and all other media storage devices.

7. **Covenant Not To Compete.** During Executive's employment by Employer and for a period expiring one (1) year after the termination of Executive's employment for any reason, Executive covenants and agrees that Executive will not:

a. Directly, indirectly, or otherwise, own, manage, operate, control, serve as a consultant to, be employed by, participate in, or be connected, in any manner, with the ownership, management, operation or control of any business that competes with the Business or that competes with Employer or any of its affiliates or that is

engaged in any type of business which, at any time during Executive's employment with Employer, Employer or any of its affiliates planned to develop;

b. Hire, offer to hire, entice away or in any other manner persuade or attempt to persuade any officer, employee or agent of Employer or any of its affiliates to alter or discontinue a relationship with Employer or to do any act that is inconsistent with the interests of Employer or any of its affiliates;

c. Directly or indirectly solicit, divert, take away or attempt to solicit, divert or take away any customers of Employer or any of its affiliates; or

d. Directly or indirectly solicit, divert, or in any other manner persuade or attempt to persuade any supplier of Employer or any of its affiliates to alter or discontinue its relationship with Employer or any of its affiliates.

For the purposes of this Section 7, businesses that are deemed to compete with Employer include, without limitation, businesses engaged in manufacturing and marketing biopreservation media for cells, tissues, and organs or cold chain management products and/or services. The geographic scope of the prohibitions in this Section 7 shall be any city, town or county in which the Company conducts or does any business as of or within one (1) year of Executive's last day of employment with the Company. Notwithstanding Executive's obligations under this Section 7, Executive will be entitled to own, as a passive investor, up to five percent (5%) of any publicly traded company without violating this provision.

Employer and Executive agree that: this provision does not impose an undue hardship on Executive and is not injurious to the public; that this provision is necessary to protect the business of Employer and its affiliates; the nature of Executive's responsibilities with Employer under this Agreement require Executive to have access to confidential information which is valuable and confidential to all of the Business; the scope of this Section 7 is reasonable in terms of length of time and geographic scope; and adequate consideration supports this Section 7, including consideration herein.

8. **Confidential Information.** Executive recognizes that Employer's business and continued success depend upon the use and protection of confidential and proprietary business information, including, without limitation, the information and technology developed by or available through licenses to Employer, to which Executive has access (all such information being "Confidential Information"). For purposes of this Agreement, the phrase "Confidential Information" includes, for Employer and its current or future subsidiaries and affiliates, without limitation, and whether or not specifically designated as confidential or proprietary: all business plans and marketing strategies; information concerning existing and prospective markets and customers; financial information; information concerning the development of new products and services; information concerning any personnel of Employer (including, without limitation, skills and compensation information); intellectual property; and technical and non-technical data

related to software programs, designs, specifications, compilations, inventions, improvements, methods, processes, procedures and techniques; provided, however, that the phrase does not include information that (a) was lawfully in Executive's possession prior to disclosure of such information by Employer; (b) was, or at any time becomes, available in the public domain other than through a violation of this Agreement; (c) is documented by Executive as having been developed by Executive outside the scope of Executive's employment and independently; or (d) is furnished to Executive by a third party not under an obligation of confidentiality to Employer. Executive agrees that during Executive's employment and after termination of employment irrespective of cause, Executive will use Confidential Information only (i) while employed by the Company, in the business of and for the benefit of the Company, or (ii) when required to do so by a court of competent jurisdiction, by any governmental agency having supervisory authority over the business of the Company, or by any administrative body or legislative body (including a committee thereof) with jurisdiction to order Executive to divulge, disclose or make accessible such information, and then only after providing written notice to Employer that such a demand has been made. Executive's obligation under this Agreement is in addition to any obligations Executive has under state or federal law. Executive agrees to deliver to Employer immediately upon termination of Executive's employment, or at any time Employer so requests, all tangible items containing any Confidential Information (including, without limitation, all memoranda, photographs, records, reports, manuals, drawings, blueprints, prototypes, notes taken by or provided to Executive, and any other documents or items of a confidential nature belonging to Employer), together with all copies of such material in Executive's possession or control. Executive agrees that in the course of Executive's employment with Employer, Executive will not violate in any way the rights that any entity has with regard to trade secrets or proprietary or confidential information. Executive's obligations under this Section 8 are indefinite in term and shall survive the termination of this Agreement.

9. **Work Product and Copyrights.** Executive agrees that all right, title and interest in and to the materials resulting from the performance of Executive's duties at Employer and all copies thereof, including works in progress, in whatever media, (the "Work"), will be and remain in Employer upon their creation. Executive will mark all Work with Employer's copyright or other proprietary notice as directed by Employer. Executive further agrees:

a. To the extent that any portion of the Work constitutes a work protectable under the copyright laws of the United States (the "Copyright Law"), that all such Work will be considered a "work made for hire" as such term is used and defined in the Copyright Law, and that Employer will be considered the "author" of such portion of the Work and the sole and exclusive owner throughout the world of copyright therein; and

b. If any portion of the Work does not qualify as a "work made for hire" as such term is used and defined in the Copyright Law, that Executive hereby assigns and agrees to assign to Employer, without further consideration, all right, title and interest in and to such Work or in any such portion thereof and any copyright therein

and further agrees to execute and deliver to Employer, upon request, appropriate assignments of such Work and copyright therein and such other documents and instruments as Employer may request to fully and completely assign such Work and copyright therein to Employer, its successors or nominees, and that Executive hereby appoints Employer as attorney-in-fact to execute and deliver any such documents on Executive's behalf in the event Executive should fail or refuse to do so within a reasonable period following Employer's request.

10. **Inventions and Patents.** For purposes of this Agreement, "Inventions" includes, without limitation, information, inventions, contributions, improvements, ideas, or discoveries, whether protectable or not, and whether or not conceived or made during work hours. Executive agrees that all Inventions conceived or made by Executive during the period of employment with Employer belong to Employer, provided they grow out of Executive's work with Employer or are related in some manner to the Business, including, without limitation, research and product development, and projected business of Employer or its affiliated companies. Accordingly, Executive will:

a. Make adequate written records of such Inventions, which records will be Employer's property;

b. Assign to Employer, at its request, any rights Executive may have to such Inventions for the U.S. and all foreign countries;

c. Waive and agree not to assert any moral rights Executive may have or acquire in any Inventions and agree to provide written waivers from time to time as requested by Employer; and

d. Assist Employer (at Employer's expense) in obtaining and maintaining patents or copyright registrations with respect to such Inventions.

Executive understands and agrees that Employer or its designee will determine, in its sole and absolute discretion, whether an application for patent will be filed on any Invention that is the exclusive property of Employer, as set forth above, and whether such an application will be abandoned prior to issuance of a patent. Employer will pay to Executive, either during or after the term of this Agreement, the following amounts if Executive is sole inventor, or Executive's proportionate share if Executive is joint inventor: $750 upon filing of the initial application for patent on such Invention; and $1,500 upon issuance of a patent resulting from such initial patent application, provided Executive is named as an inventor in the patent.

Executive further agrees that Executive will promptly disclose in writing to Employer during the term of Executive's employment and for one (1) year thereafter, all Inventions whether developed during the time of such employment or thereafter (whether or not Employer has rights in such Inventions) so that Executive's rights and Employer's rights in such Inventions can be determined. Except as set forth on the initialed Exhibit B (List

of Inventions) to this Agreement, if any, Executive represents and warrants that Executive has no Inventions, software, writings or other works of authorship useful to Employer in the normal course of the Business, which were conceived, made or written prior to the date of this Agreement and which are excluded from the operation of this Agreement.

NOTICE: In accordance with Washington law, this Section 10 does not apply to Inventions for which no equipment, supplies, facility, or trade secret information of Employer was used and which was developed entirely on Executive's own time, unless: (a) the Invention relates (i) directly to the business of Employer or (ii) to Employer's actual or demonstrably anticipated research or development, or (b) the Invention results from any work performed by Executive for Employer.

11. **Cooperation.** The parties agree that certain matters in which Executive will be involved during the Term may necessitate Executive's cooperation in the future. Accordingly, following the termination of Executive's employment for any reason, to the extent reasonably requested by the Board, Executive shall cooperate with the Employer in connection with matters arising out of Executive's service to the Employer; provided that, the Employer shall make reasonable efforts to minimize disruption of Executive's other activities. The Employer shall reimburse Executive for reasonable expenses incurred in connection with such cooperation.

12. **Non-Disparagement.** Executive agrees and covenants that Executive will not at any time make, publish or communicate to any person or entity or in any public forum any defamatory or disparaging remarks, comments, or statements concerning the Employer or its businesses, or any of its employees, officers, and existing and prospective customers, suppliers, investors and other associated third parties. This Section 12 does not, in any way, restrict or impede Executive from exercising protected rights to the extent that such rights cannot be waived by agreement or from complying with any applicable law or regulation or a valid order of a court of competent jurisdiction or an authorized government agency, provided that such compliance does not exceed that required by the law, regulation, or order. The Executive shall promptly provide written notice of any such order to the Chief Executive Officer.

13. **Remedies.** Notwithstanding other provisions of this Agreement regarding dispute resolution, Executive agrees that Executive's violation of any of Sections 7, 8, 9, 10, 11 or 12 of this Agreement would cause Employer irreparable harm which would not be adequately compensated by monetary damages and that an injunction may be granted by any court or courts having jurisdiction, restraining Executive from violation of the terms of this Agreement, upon any breach or threatened breach of Executive of the obligations set forth in any of Sections 7, 8, 9, 10, 11 or 12. The preceding sentence shall not be construed to limit Employer from any other relief or damages to which it may be entitled as a result of Executive's breach of any provision of this Agreement, including Sections 7, 8, 9, 10, 11 or 12. Executive also agrees that a violation of any of Sections 7, 8, 9, 10, 11 or 12 would entitle Employer, in addition to all other remedies available at law or equity, to recover from Executive any and all funds, including, without limitation, wages, salary

and profits, which will be held by Executive in constructive trust for Employer, received by Executive in connection with such violation.

14. **Dispute Resolution.** Except for the right of Employer and Executive to seek injunctive relief in court, any controversy, claim or dispute of any type arising out of or relating to Executive's employment or the provisions of this Agreement shall be resolved in accordance with this Section 14 regarding resolution of disputes, which will be the sole and exclusive procedure for the resolution of any disputes. This Agreement shall be enforced in accordance with the Federal Arbitration Act, the enforcement provisions of which are incorporated by this reference. Matters subject to these provisions include, without limitation, claims or disputes based on statute, contract, common law and tort and will include, for example, matters pertaining to termination, discrimination, harassment, compensation and benefits. Matters to be resolved under these procedures also include claims and disputes arising out of statutes such as the Fair Labor Standards Act, Title VII of the Civil Rights Act, the Age Discrimination in Employment Act, the Washington Minimum Wage Act, and the Washington Law Against Discrimination. Nothing in this provision is intended to restrict Executive from submitting any matter to an administrative agency with jurisdiction over such matter.

a. **Mediation.** Employer and Executive will make a good faith attempt to resolve any and all claims and disputes by submitting them to mediation in Snohomish County, Washington before resorting to arbitration or any other dispute resolution procedure. The mediation of any claim or dispute must be conducted in accordance with the then-current JAMS procedures for the resolution of employment disputes by mediation, by a mediator who has had both training and experience as a mediator of general employment and commercial matters. If the parties to this Agreement cannot agree on a mediator, then the mediator will be selected by JAMS in accordance with JAMS' strike list method. Within thirty (30) days after the selection of the mediator, Employer and Executive and their respective attorneys will meet with the mediator for one mediation session of at least four hours. If the claim or dispute cannot be settled during such mediation session or mutually agreed continuation of the session, either Employer or Executive may give the mediator and the other party to the claim or dispute written notice declaring the end of the mediation process. All discussions connected with this mediation provision will be confidential and treated as compromise and settlement discussions. Nothing disclosed in such discussions, which is not independently discoverable, may be used for any purpose in any later proceeding. The mediator's fees will be paid in equal portions by Employer and Executive, unless Employer agrees to pay all such fees.

b. **Arbitration.** If any claim or dispute has not been resolved in accordance with Section 14.a., then the claim or dispute will be determined by arbitration in accordance with the then-current JAMS employment arbitration rules and procedures, except as modified herein. The arbitration will be conducted by a sole neutral arbitrator who has had both training and experience as an arbitrator of general employment and commercial matters and who is and for at least ten (10)

years has been, a partner, a shareholder, or a member in a law firm. The arbitration shall be held in Snohomish County, Washington. If Employer and Executive cannot agree on an arbitrator, then the arbitrator will be selected by JAMS in accordance with Rule 15 of the JAMS employment arbitration rules and procedures. No person who has served as a mediator under the mediation provision, however, may be selected as the arbitrator for the same claim or dispute. Reasonable discovery will be permitted and the arbitrator may decide any issue as to discovery. The arbitrator may decide any issue as to whether or as to the extent to which any dispute is subject to the dispute resolution provisions in Section 14 and the arbitrator may award any relief permitted by law. The arbitrator must base the arbitration award on the provisions of Section 14 and applicable law and must render the award in writing, including an explanation of the reasons for the award. Judgment upon the award may be entered by any court having jurisdiction of the matter, and the decision of the arbitrator will be final and binding. The statute of limitations applicable to the commencement of a lawsuit will apply to the commencement of an arbitration under Section 14.b. The arbitrator's fees will be paid in equal portions by Employer and Executive, unless Employer agrees to pay all such fees.

15. **Fees Related to Dispute Resolution.** Unless otherwise agreed, the prevailing party will be entitled to its costs and attorneys' fees incurred in any litigation or dispute relating to the interpretation or enforcement of this Agreement.

16. **409A**. It is intended that any payment or benefit that is provided pursuant to or in connection with this Agreement that is considered to be deferred compensation subject to Section 409A of the Internal Revenue Code of 1986, as amended ("Code") shall be paid and provided in a manner, and at such time and form, as complies with the applicable requirements of Section 409A of the Code to avoid the unfavorable tax consequences provided therein for non-compliance. It is further intended that the payments hereunder shall, to the maximum extent permissible under Section 409A of the Code, be exempt from Section 409A of the Code under either (i) the exception for involuntary separation pay to the extent that all payments are payable within the limitations described in Treasury Regulation Section 1.409A-1(b)(9), or (ii) the short-term deferral exception described in Treasury Regulation Section 1.409A-1(b)(4) to the extent that all payments are payable no later than two and a half months after the end of the first taxable year in which the right to the payment is no longer subject to a substantial risk of forfeiture.

a. If the Executive is a "specified employee" for purposes of Section 409A(a)(2)(B)(i) of the Code at such time, any payments to be made or benefits to be delivered in connection with the Executive's "Separation from Service" (as defined below) that constitute deferred compensation subject to Section 409A of the Code shall not be made until six months plus one day after the Executive's Separation from Service (the "409A Deferral Period") as required by Section 409A of the Code, provided that the payment of any such deferred compensation may be paid immediately following the Executive's death. Payments of any such deferred compensation otherwise due to be made in installments or periodically during the 409A Deferral Period shall be accumulated and paid in a lump sum as soon as the

409A Deferral Period ends, and the balance of the payment shall be made as otherwise scheduled.

b. For purposes of this Agreement, all rights to payments and benefits hereunder shall be treated as rights to receive a series of separate payments and benefits to the fullest extent allowed by Section 409A of the Code.

c. For purposes of this Agreement, with respect to the timing of any amounts that constitute deferred compensation subject to Section 409A of the Code that depends on termination of employment or separation from service, termination of employment or separation from service shall mean a "separation from service" within the meaning of Section 409A of the Code where it is reasonably anticipated that no further services would be performed after such date or that the level of bona fide services the Executive would perform after that date (whether as an employee or independent contractor) would permanently decrease to a level less than or equal to twenty percent (20%) of the average level of bona fide services the Executive performed over the immediately preceding thirty-six (36) month period.

17. **Disclosure.** Executive agrees fully and completely to reveal the terms of this Agreement to any future employer or potential employer of Executive and authorizes Employer, at its election, to make such disclosure.

18. **Representation of Executive.** Executive represents and warrants to Employer that Executive is free to enter into this Agreement and has no contract, commitment, arrangement or understanding to or with any party that restrains or is in conflict with Executive's performance of the covenants, services and duties provided for in this Agreement, and is not contravene the terms of any statute, law, or regulation to which Executive is subject. Executive agrees to indemnify Employer and to hold it harmless against any and all liabilities or claims arising out of any unauthorized act or acts by Executive that, the foregoing representation and warranty to the contrary notwithstanding, are in violation, or constitute a breach, of any such contract, commitment, arrangement or understanding.

19. **Conditions of Employment.** Employer's obligations to Executive under this Agreement are conditioned upon Executive's timely compliance with requirements of the United States immigration laws.

20. **Assignability.** This Agreement shall not be assignable by Executive. This Agreement may be assigned by the Company to a company which is a successor in interest to substantially all of the business operations of the Company. Such assignment shall become effective when the Company notifies the Executive of such assignment or at such later date as may be specified in such notice. Upon such assignment, the rights and obligations of the Company hereunder shall become the rights and obligations of such successor company, provided that any assignee expressly assumes the obligations, rights and privileges of this Agreement.

21. **Notices.** Any notices required or permitted to be given hereunder are sufficient if in writing and delivered by hand, by facsimile, by registered or certified mail, postage prepaid, or by overnight courier, to Executive at Executive's home address as most recently updated in Executive's Human Resources records, or to BioLife Solutions, Inc., 3303 Monte Villa Parkway, #310, Bothell, WA 98021, Attention: Chief Executive Officer. Notices shall be deemed to have been given (i) upon delivery, if delivered by hand or by email, (ii) seven days after mailing, if mailed, (iii) one business day after delivery, if delivered by courier, and (iv) one business day following receipt of an appropriate electronic confirmation, if by facsimile.

22. **Severability**. If any provision of this Agreement or compliance by any of the parties with any provision of this Agreement constitutes a violation of any law, or is or becomes unenforceable or void, then such provision, to the extent only that it is in violation of law, unenforceable or void, shall be deemed modified to the extent necessary so that it is no longer in violation of law, unenforceable or void, and such provision will be enforced to the fullest extent permitted by law. The Parties shall engage in good faith negotiations to modify and replace any provision which is declared invalid or unenforceable with a valid and enforceable provision, the economic effect of which comes as close as possible to that of the invalid or unenforceable provision which it replaces. If such modification is not possible, said provision, to the extent that it is in violation of law, unenforceable or void, shall be deemed severable from the remaining provisions of this Agreement, which provisions will remain binding on the parties.

23. **Waivers**. No failure on the part of either party to exercise, and no delay in exercising, any right or remedy hereunder will operate as a waiver thereof; nor will any single or partial waiver of a breach of any provision of this Agreement operate or be construed as a waiver of any subsequent breach; nor will any single or partial exercise of any right or remedy hereunder preclude any other or further exercise thereof or the exercise of any other right or remedy granted hereby or by law.

24. **Governing Law.** Except as provided in Section 14 above, the validity, construction and performance of this Agreement shall be governed by the laws of the State of Washington without regard to the conflicts of law provisions of such laws. The parties hereto expressly recognize and agree that the implementation of this Section 24 is essential in light of the fact that Employer has its corporate headquarters and its principal executive offices within the State of Washington, and there is a critical need for uniformity in the interpretation and enforcement of the employment agreements between Employer and its key employees. Aside from any disputes that must be resolved by arbitration as provided for in Section 14, the Snohomish County Superior Court in Washington shall have exclusive jurisdiction of any lawsuit arising from or relating to Executive's employment with, or termination from, Employer, or arising from or relating to this Agreement. Executive consents to such venue and personal jurisdiction.

25. **Counterparts.** This agreement may be executed in counterpart in different places, at different times and on different dates, and in that case all executed counterparts taken together collectively constitute a single binding agreement.

26. **Costs and Fees Related to Negotiation and Execution of Agreement.** Each Party Shall be responsible for the payment of its own costs and expenses, including legal fees and expenses, in connection with the negotiation and execution of this Agreement. Neither Party will be liable for the payment of any commissions or compensation in the nature of finders' fees or brokers' fees, gratuity or other similar thing or amount in consideration of the other Party entering into this Agreement to any broker, agent or third party acting on behalf of the other Party.

27. **Entire Agreement.** This instrument contains the entire agreement of the parties with respect to the relationship between Executive and Employer and supersedes all prior agreements and understandings, and there are no other representations or agreements other than as stated in this Agreement related to the terms and conditions of Executive's employment. This Agreement may be changed only by an agreement in writing signed by the party against whom enforcement of any waiver, change, modification, extension or discharge is sought, and any such modification will be signed by an authorized representative of Employer.

IN WITNESS WHEREOF, the parties have duly signed and delivered this Agreement as of the day and year first above written.

EMPLOYER

By: _____

Title: Chief Executive Officer

EXECUTIVE

_____

Geraint Phillips

EXHIBIT A

DISCLOSURE OF OUTSIDE BOARD OF DIRECTORS AND TRUSTEE POSITIONS

EXHIBIT B

LIST OF INVENTIONS

AMENDED AND RESTATED EXECUTIVE EMPLOYMENT AGREEMENT

THIS AMENDED AND RESTATED EXECUTIVE EMPLOYMENT AGREEMENT (‘‘Agreement”) is made between BioLife Solutions Inc., a Delaware corporation (“Employer” or the “Company”), and Garrie Richardson (“Executive”). Executive and/or the Company are sometimes referred to herein as a “Party” or the “Parties.” The effective date of this amendment and restatement is October 19, 2023. This Agreement supersedes and replaces the employment agreement effected by the parties on October 1, 2020 and any amendments thereto.

RECITALS

A. Employer is in the business (the “Business”) of developing, manufacturing and marketing bioproduction tools and services for cell and gene therapies and other biologic materials.

B. Employer currently employs Executive as General Manager, Biostorage.

C. Employer desires to promote Executive to Chief Revenue Officer, in which capacity Executive will continue to have access to Employer’s Confidential Information (as hereinafter defined), and to obtain assurances that Executive will protect Employer’s Confidential Information and will not compete with Employer or solicit its customers or its other employees during the Term and for a reasonable period of time after termination of employment pursuant to this Agreement.

D. Executive is willing to agree to the terms set forth in this Agreement.

E. Executive desires to be assured of the salary and other benefits provided for in this Agreement.

AGREEMENT

NOW, THEREFORE, in consideration of the mutual covenants herein contained, and other good and valuable consideration, the sufficiency and receipt of which are hereby acknowledged, the parties agree as follows:

1. Employment.

a Employer hereby employs Executive, and Executive agrees to be employed by Employer, as Chief Revenue Officer, in accordance with the terms and conditions set forth in this Agreement. Changes may be made from time to time by Employer and/or the Company’s Board of Directors (“Board of Directors”) in its sole discretion to the duties, authorities, reporting relationships and title of Executive. Executive will report to the Chief Executive Officer of the Company. Executive will work from Atlanta, Georgia and will travel as reasonably needed to perform Executive’s duties as Chief Revenue Officer.

b Executive will devote full time, attention, and best efforts to achieving the purposes and discharging the responsibilities of the Chief Revenue Officer. Executive will comply with all rules, policies and procedures of Employer as modified from time to time, including without limitation, rules and procedures set forth in the Employer's employee handbook, supervisor's manuals and operating manuals. Executive will perform all of Executive's responsibilities in compliance with all applicable laws and will ensure that the operations that Executive manages are in compliance with all applicable laws. During Executive's employment, Executive will not engage in any other business activity which, in the reasonable judgment of the Employer, conflicts with the duties of Executive under this Agreement, whether or not such activity is pursued for gain, profit or other pecuniary advantage.

c Nothing herein shall preclude Executive from: (1) continuing to serve on the board of directors or trustees of any business corporation or any charitable organization on which he currently serves and which is identified on Exhibit A hereto, or (2) subject to the prior approval of the Board, not to be unreasonably withheld, appointment to any additional directorships or trusteeships, or (3) serving in an advisory role for other business entities, or (4) teaching, presenting papers, and lecturing with prior written approval by the CEO or CFO of the Company, or (5) managing Executive's personal and family assets, provided in each case, and in the aggregate, that such activities do not interfere with the performance of Executive's duties hereunder or conflict with Section 10 of this Agreement.

2. Term of Employment. The term of employment ("Term") will not be for a definite period, but rather continue indefinitely until terminated in accordance with the terms and conditions of this Agreement. Either party may terminate the employment at- will.

3. Compensation. For the duration of Executive's employment hereunder, the Executive will be entitled to compensation which will be computed and paid pursuant to the following subparagraphs.

a **Base Salary**. Employer will pay to Executive a base salary ("Base Salary" or "salary") at an annual rate of $367,500, payable in regular installments (but in no event less than monthly), subject to withholdings and deductions as required or permitted by law, as is Employer's policy with respect to other employees. Executive's Base Salary will be reviewed periodically by the Board of Directors during the Term and may be adjusted in the sole discretion of the Board of Directors based on such review, but will not be reduced by Employer unless a material adverse change in the financial condition or operations of Employer has occurred or unless Executive's responsibilities are altered to reflect less responsibility.

b **Performance Bonus**. Employer under direction of its Board of Directors may pay or cause to be paid to Executive such bonus as it from time to time determines appropriate.

4. Other Benefits.

a **Certain Benefits**. Executive will be eligible to participate in all employee benefit programs established by Employer that are applicable to management personnel such as medical, pension, disability and life insurance plans on a basis commensurate with Executive's position and in accordance with Employer's policies from time to time, but nothing herein shall require the adoption or maintenance of any such plan.

b **Vacations, Holidays and Expenses**. Executive will be provided accrued paid vacation of four (4) weeks each calendar year, which shall be the maximum number of days Executive may accrue at any time, and which shall be taken at such times as are consistent with Executive's responsibilities hereunder. Executive will be provided such holidays as Employer makes available to its management level employees generally. Employer will reimburse Executive in accordance with company policies and procedures for reasonable expenses necessarily incurred in the performance of duties hereunder against appropriate receipts and vouchers indicating the specific business purpose for each such expenditure. Executive will be entitled to reimbursement of business class air fare. In no case shall any reimbursement be made later than March 15th of the year following the calendar year in which such expense is incurred.

c **Right of Set-off**. By accepting this Agreement, Executive consents to a deduction from any amounts Employer owes Executive from time to time (including amounts owed to Executive as wages or other compensation, fringe benefits, or vacation pay, as well as any other amounts owed to Executive by Employer), to the extent of the amounts Executive owes to Employer to cover insurance premiums, benefit plan contributions or other deductions not amounting to a rebate on the Executive's wages, in accordance with applicable law. Whether or not Employer elects to make any set-off in whole or in part, if Employer does not recover by means of set-off the full amount Executive owes it, calculated as set forth above, Executive agrees to pay immediately the unpaid balance to Employer except where such repayment would be prohibited by law.

5. Clawback. Notwithstanding any other provisions in this Agreement to the contrary, any incentive-based compensation, or any other compensation, paid to the Executive pursuant to this Agreement or any other agreement or arrangement with the Company which is subject to recovery under any law, government regulation, or stock exchange listing requirement, will be subject to such deductions and clawback as may be required to be made pursuant to such law, government regulation, or stock exchange listing requirement (or any policy adopted by the Company pursuant to any such law, government regulation or stock exchange listing requirement). This provision shall survive termination of this Agreement.

6. Termination, Discharge.

a **For Cause**. Employer will have the right to immediately terminate Executive's services and this Agreement for Cause. "Cause" means the Employer's reasonable belief that any of the following has occurred:

(i) any breach of this Agreement by Executive, including, without limitation, breach of Executive's covenants in Sections 10, 11, 12, 13, or 14;

(ii) any failure to perform assigned job responsibilities that continues unremedied for a period of ten (10) days after written notice to Executive by Employer;

(iii) Executive's malfeasance or misconduct in connection with Executive's duties hereunder or any act or omission of Executive which is materially injurious to the financial condition or business reputation of the Company or any of its subsidiaries or affiliates;

(iv) commission of a felony or misdemeanor involving moral turpitude or failure to contest prosecution for a felony or misdemeanor involving moral turpitude;

(v) the Employer's reasonable belief that Executive engaged in a violation of any statute, rule or regulation, any of which in the reasonable judgment of Employer is harmful to the Business or to Employer's reputation, unless Executive was directed by Employer to take the action that resulted in such a violation;

(vi) the Employer's reasonable belief that Executive engaged in unethical practices, dishonesty or disloyalty; and

(vii) or any reason that would constitute "cause" under the laws the State of Georgia or State of Washington.

Upon termination of Executive's employment hereunder for Cause, the Company shall pay the Executive no later than fourteen (14) days from the termination date in a lump sum: (i) his salary through the date of termination, (ii) for any unused vacation time, and (iii) for any unreimbursed business expenses that are subject to reimbursement under Employer's then current policy on business expenses ("Accrued Compensation"). Except as otherwise set forth in this Agreement, Executive will have no rights to any unvested benefits or any other compensation or payments after the termination date.

b **Due to Death or Disability**. Employer will have the right to immediately terminate Executive's services and this Agreement due to death or disability. For purposes of this Agreement, "disability" means the incapacity or inability of Executive, whether due to accident, sickness or otherwise, as determined by a medical doctor acceptable to the Board of Directors and confirmed in writing by such doctor, to perform the essential functions of Executive's position under this Agreement, with or without reasonable accommodation (provided that no accommodation that imposes undue hardship on Employer will be required) for a period of one hundred and twenty (120) consecutive days

or for an aggregate of one hundred and eighty (180) days during any period of twelve (12) months, or such longer period as may be required under disability law.

Upon termination of Executive's employment hereunder due to death or disability, the Company shall pay the Executive no later than fourteen (14) days from the termination date in a lump sum: (i) his salary through the date of termination, (ii) a portion of any incentive bonus opportunity previously approved by the Board, prorated for employment during the applicable performance period prior to such termination, (iii) for any unused vacation time, and (iv) for any unreimbursed business expenses that are subject to reimbursement under Employer's then current policy on business expenses. Upon termination of Executive's employment hereunder due to death or disability, to the extent consistent with any applicable compensation plans, all unvested stock options, awards, or other equity grants or awards shall immediately fully vest for the benefit of Executive's estate. Executive or Executive's estate (as the case may be) shall be entitled to receive any vested benefits required to be paid by law and any vested compensation required to be paid by law.

c **Without Cause**. Employer may terminate Executive's employment under this Agreement without Cause and without advance notice; provided, however, that Employer will pay (unless subparagraph 5(d) of this Agreement applies, in which case the provisions therein shall govern), no later than fourteen (14) days from the termination date in a lump sum, the Accrued Compensation. In addition, Employer will pay (unless subparagraph 5(d) of this Agreement applies, in which case the provisions therein shall govern), no later than sixty (60) days from the termination date in a lump sum:

(i) severance pay of twelve (12) months' worth of Executive's salary at the rate in effect on the termination date.

(ii) the amount equal to the cost of twelve (12) months' medical insurance premiums at a monthly amount equal to the amount of COBRA coverage in effect as of the termination date.

(iii) an additional tax gross up payment in an amount necessary so that the amount received by Executive to cover COBRA premiums under Section 6(c)(ii) after all applicable withholding tax is deducted (using applicable supplemental wage withholding rates) is the full amount Executive would have received under Section 6(c)(ii) if no tax withholding was made.

Upon termination of Executive's employment hereunder due to termination without Cause, all unvested stock options, awards, or other equity grants or awards shall immediately fully vest. Executive or Executive's estate (as the case may be) shall be entitled to receive any vested benefits required to be paid by law and any vested compensation required to be paid by law. Such payments will be subject to all appropriate deductions and withholdings.

Executive shall only be entitled to the severance benefits described in this Section 6(c) (other than Accrued Compensation) if, within fifty-five (55) days following the date of termination, Executive has signed (and then Executive does not rescind, as may be permitted by law) a general release of claims in a form mutually acceptable to both parties (provided, however, that such release of claims shall only require each party to release the other party from claims relating directly to this Agreement, Executive's employment and the termination thereof, and shall not require Executive to release claims relating to vested employee benefits, claims relating to his status as a shareholder of the Company and claims that cannot be waived by law, including, but not limited to, unemployment benefit rights and workers' compensation benefits).

d Change in Control.

(i) For purposes of this Agreement, Change in Control shall mean (i) the consummation of a merger or consolidation of the Company with or into another entity, (ii) the dissolution, liquidation or winding up of the Company or (iii) the sale of all or substantially all of the Company's assets, except that a Change in Control shall not include the Company's acquisition of the stock or assets of Custom Biogenic Systems. The foregoing notwithstanding, a merger or consolidation of the Company shall not constitute a "Change in Control" if immediately after such merger or consolidation a majority of the voting power of the capital stock of the continuing or surviving entity, or any direct or indirect parent corporation of such continuing or surviving entity, will be owned by the persons who were the Company's stockholders immediately prior to such merger or consolidation in substantially the same proportions as their ownership of the voting power of the Company's capital stock immediately prior to such merger or consolidation.

(ii) Employer may terminate Executive's employment under this Agreement or Executive may resign for Good Reason upon or within 12 months following a Change in Control without advance notice; provided, however, that Employer will pay, no later than fourteen (14) days from the termination date in a lump sum the Accrued Compensation. In addition, Employer will pay, no later than sixty (60) days from the termination date in a lump sum:

(a) as severance pay, twelve (12) months' worth of Executive's salary at the rate in effect on the termination date;

(b) 100% of any incentive cash and/or stock bonus opportunity for the current year;

(c) the amount equal to the cost of twelve (12) months' medical insurance premiums at a monthly amount equal to the amount of COBRA coverage in effect as of the termination date; and

(d) an additional tax gross up payment in an amount necessary so that the amount received by Executive to cover COBRA premiums under Section 6(d)(ii)(c) after all applicable withholding tax is deducted (using applicable supplemental wage withholding rates) is the full amount Executive would have received under Section 6(d)(ii)(c) if no tax withholding was made.

(iii) Executive shall only be entitled to such severance pay (other than Accrued Compensation) described in this Section 6(d) if, within fifty-five (55) days following the date of termination, Executive has signed (and then Executive does not rescind, as may be permitted by law) a general release of claims in a form mutually acceptable to both parties (provided, however, that such release of claims shall only require each party to release the other party from claims relating directly to Executive's employment and the termination thereof, and shall not require Executive to release claims relating to vested employee benefits, claims relating to his status as a shareholder of the Company and claims that cannot be waived by law, including, but not limited to, unemployment benefit rights and workers' compensation benefits).

(iv) Upon termination of Executive's employment hereunder due to a Change in Control, including by Executive due to Good Reason, all unvested stock options, awards, or other equity grants or awards shall immediately fully vest. Executive or Executive's estate (as the case may be) shall be entitled to receive any vested benefits required to be paid by law and any vested compensation required to be paid by law.

e **No Fault Termination By Executive**. Executive may terminate Executive's employment under this Agreement for any reason provided that Executive gives Employer at least ninety (90) days' notice in writing. Employer may, at its option, accelerate such termination date to any date at least two weeks after Executive's notice of termination. Employer may also, at its option, relieve Executive of all duties and authority after notice of termination has been provided. Upon termination of Executive's employment hereunder due to no fault, the Company shall pay Executive no later than fourteen (14) days from the termination date in a lump sum the Accrued Compensation. Such payments will be subject to all appropriate deductions and withholdings. Upon termination, Executive will have no rights to any unvested benefits or any other compensation, other than for any unpaid salary through the last day of employment, or as otherwise set forth in this Agreement.

7. Termination By Executive for Good Reason. Executive's employment pursuant to this Agreement shall terminate in the event Executive shall determine that there is "Good Reason" to terminate his employment, which shall mean the following:

a Employer's material breach of the terms of this Agreement or any other written agreement between Executive and Employer;

b a material reduction of Executive's salary, other than as a result of a general salary reduction affecting substantially all Company employees;

c a reassignment of Executive to a position of lesser responsibility or to a business unit other than the Company's biological and pharmaceutical storage business unit;

d Executive's involuntary relocation by the Company to a location which is outside the boundaries established by the Internal Revenue Service for determining whether expenses incurred in commuting to and from a place of employment are tax deductible; or

e any failure by the Company to obtain the assumption of this Agreement by any successor or assign of the Company.

Provided that Executive has provided Employer with notice of the existence of a condition giving rise to "Good Reason" to terminate within ninety (90) days following the initial existence of such a condition, Employer shall have thirty (30) days to cure any such alleged breach, assignment, reduction or requirement referenced above, after Executive provides Employer written notice of the actions or omissions constituting such breach, assignment, reduction or requirement.

If Executive resigns his employment for Good Reason, Executive shall be paid no later than fourteen (14) days from the termination date in a lump sum the Accrued Compensation. In addition, no later than sixty (60) days from the termination date in a lump sum:

(i) severance pay of twelve (12) months' worth of Executive's salary at the rate in effect on the termination date.

(ii) the amount equal to the cost of twelve (12) months' medical insurance premiums at a monthly amount equal to the amount of COBRA coverage in effect as of the termination date.

(iii) an additional tax gross up payment in an amount necessary so that the amount received by Executive to cover COBRA premiums under Section 7(e)(ii) after all applicable withholding tax is deducted (using applicable supplemental wage withholding rates) is the full amount Executive would have received under Section 7(e)(ii) if no tax withholding was made.

Upon termination of Executive's employment hereunder due to resignation for Good Reason, all unvested stock options, awards, or other equity grants or awards shall immediately fully vest. Executive or Executive's estate (as the case may be) shall be entitled to receive any vested benefits required to be paid by law and any vested compensation required to be paid by law. Such payments will be subject to all appropriate deductions and withholdings.

Executive shall only be entitled to the severance benefits described in this Section 7 (other than Accrued Compensation) if, within fifty-five (55) days following the date of termination,

Executive has signed (and then Executive does not rescind, as may be permitted by law) a general release of claims in a form mutually acceptable to both parties (provided, however, that such release of claims shall only require each party to release the other party from claims relating directly to Executive's employment and the termination thereof, and shall not require Executive to release claims relating to vested employee benefits, claims relating to his status as a shareholder of the Company and claims that cannot be waived by law, including, but not limited to, unemployment benefit rights and workers' compensation benefits). If Section 6(d) applies to a termination of employment hereunder, the severance benefits provided therein, and not in this Section 7, shall be provided.

8. Return of Company Property. Upon termination of employment or upon request of the Company, Executive shall deliver to the Company all property, documents and materials pertaining to the Company's business including, but not limited to, memoranda, notes, records, drawings, manuals, disks, copies, representations, extracts, summaries and analyses, all inventory, demonstration units, and any other property, documents or media of the Company, and all equipment belonging to the company, including but not limited to corporate cards, access cards, office keys, office equipment, laptop and desktop computers, cell phones and other wireless devices, thumb drives, zip drives and all other media storage devices.

9. Cooperation. The parties agree that certain matters in which Executive will be involved during the Term may necessitate Executive's cooperation in the future. Accordingly, following the termination of Executive's employment for any reason, to the extent reasonably requested by the Board, Executive shall cooperate with the Company in connection with matters arising out of Executive's service to the Company; provided that, the Company shall make reasonable efforts to minimize disruption of Executive's other activities. The Company shall reimburse Executive for reasonable expenses incurred in connection with such cooperation.

10. Confidential Information. Executive recognizes that Employer's business and continued success depend upon the use and protection of confidential and proprietary business information, including, without limitation, the information and technology developed by or available through licenses to Employer, to which Executive has access (all such information being "Confidential Information"). For purposes of this Agreement, the phrase "Confidential Information" includes, for Employer and its current or future subsidiaries and affiliates, without limitation, and whether or not specifically designated as confidential or proprietary: all business plans and marketing strategies; information concerning existing and prospective markets and customers; financial information; information concerning the development of new products and services; information concerning any personnel of Employer (including, without limitation, skills and personal information); intellectual property; and technical and non-technical data related to software programs, designs, specifications, compilations, inventions, improvements, methods, processes, procedures and techniques, and any similar information that Executive learned about during Executive's employment with Employer; provided, however, that the phrase does not include information that (a) was lawfully in Executive's possession prior to disclosure of such information by Employer; (b) was, or at any time becomes, available in the public domain other than through a violation of this Agreement; (c) is documented by Executive as having been

developed by Executive outside the scope of Executive's employment and independently; or (d) is furnished to Executive by a third party not under an obligation of confidentiality to Employer. Executive agrees that during Executive's employment and after termination of employment irrespective of cause, Executive will use Confidential Information only (i) while employed by the Company, in the business of and for the benefit of the Company, or (ii) when required to do so by a court of competent jurisdiction, by any governmental agency having supervisory authority over the business of the Company, or by any administrative body or legislative body (including a committee thereof) with jurisdiction to order Executive to divulge, disclose or make accessible such information, and then only after providing written notice to Employer that such a demand has been made. Executive's obligation under this Agreement is in addition to any obligations Executive has under state or federal law. Executive agrees to deliver to Employer immediately upon termination of Executive's employment, or at any time Employer so requests, all tangible items containing any Confidential Information (including, without limitation, all memoranda, photographs, records, reports, manuals, drawings, blueprints, prototypes, notes taken by or provided to Executive, and any other documents or items of a confidential nature belonging to Employer), together with all copies of such material in Executive's possession or control. Executive agrees that in the course of Executive's employment with Employer, Executive will not violate in any way the rights that any entity has with regard to trade secrets or proprietary or confidential information. Executive's obligations under this Section 10 are indefinite in term and shall survive the termination of this Agreement.

a Notice of Immunity Under the Economic Espionage Act of 1996, as amended by the Defend Trade Secrets Act of 2016: Notwithstanding any other provision of this Agreement, Executive understands that Executive will not be held criminally or civilly liable under any federal or state trade secret law for any disclosure of Confidential Information or a trade secret that is made: (i) in confidence to a federal, state, or local government official, either directly or indirectly, or to an attorney, and solely for the purpose of reporting or investigating a suspected violation of law; or (ii) in a complaint or other document that is filed under seal in a lawsuit or other proceeding. Executive also understands that if Executive files a lawsuit for retaliation by the Company for Executive's having reported a suspected violation of law, Executive may disclose the Company's Confidential Information or trade secrets to his attorney and use the Confidential Information or trade secret information in the court proceeding if Executive files any document containing the Confidential Information/trade secret under seal and does not disclose the trade secret, except pursuant to court order.

11. Work Product and Copyrights. Executive agrees that all right, title and interest in and to the materials resulting from the performance of Executive's duties at Employer and all copies thereof, including works in progress, in whatever media, (the "Work"), will be and remain in Employer upon their creation. Executive will mark all Work with Employer's copyright or other proprietary notice as directed by Employer. Executive further agrees:

a To the extent that any portion of the Work constitutes a work protectable under the copyright laws of the United States (the "Copyright Law''), that all such Work will

be considered a “work made for hire” as such term is used and defined in the Copyright Law, and that Employer will be considered the “author” of such portion of the Work and the sole and exclusive owner throughout the world of copyright therein; and

b If any portion of the Work does not qualify as a “work made for hire” as such term is used and defined in the Copyright Law, that Executive hereby assigns and agrees to assign to Employer, without further consideration, all right, title and interest in and to such Work or in any such portion thereof and any copyright therein and further agrees to execute and deliver to Employer, upon request, appropriate assignments of such Work and copyright therein and such other documents and instruments as Employer may request to fully and completely assign such Work and copyright therein to Employer, its successors or nominees, and that Executive hereby appoints Employer as attorney-in- fact to execute and deliver any such documents on Executive’s behalf in the event Executive should fail or refuse to do so within a reasonable period following Employer’s request.

12. Inventions and Patents. For purposes of this Agreement, “Inventions” includes, without limitation, information, inventions, contributions, improvements, ideas, or discoveries, whether protectable or not, and whether or not conceived or made during work hours. Executive agrees that all Inventions conceived or made by Executive during the period of employment with Employer that grow out of Executive’s work with Employer or are related in some manner to the Business, including, without limitation, research and product development, and projected business of Employer or its affiliated companies belong to Employer. Accordingly, Executive will:

a Make adequate written records of such Inventions, which records will be Employer’s property;

b Assign to Employer, at its request, any rights Executive may have to such Inventions for the U.S. and all foreign countries;

c Waive and agree not to assert any moral rights Executive may have or acquire in any Inventions and agree to provide written waivers from time to time as requested by Employer; and

d Assist Employer (at Employer’s expense) in obtaining and maintaining patents or copyright registrations with respect to such Inventions.

Executive understands and agrees that Employer or its designee will determine, in its sole and absolute discretion, whether an application for patent will be filed on any Invention that is the exclusive property of Employer, as set forth above, and whether such an application will be abandoned prior to issuance of a patent. Employer will pay to Executive, either during or after the term of this Agreement, the following amounts if Executive is sole inventor, or Executive’s proportionate share if Executive is joint inventor: $750 upon filing of the initial application for patent on such Invention; and $1,500 upon issuance of a patent resulting from such initial patent application, provided Executive is named as an inventor in the patent.

Executive further agrees that Executive will promptly disclose in writing to Employer during the Term and for one (1) year thereafter, all Inventions whether developed during the time of such employment or thereafter (whether or not Employer has rights in such Inventions) so that Executive's rights and Employer's rights in such Inventions can be determined. Except as set forth on the initialed Exhibit B (List of Inventions) to this Agreement, if any, Executive represents and warrants that Executive has no Inventions, software, writings or other works of authorship useful to Employer in the normal course of the Business, which were conceived, made or written prior to the date of this Agreement and which are excluded from the operation of this Agreement.

13. Covenant Not To Compete. During Executive's employment by Employer and for a period expiring one (1) year after the termination of Executive's employment for any reason, Executive covenants and agrees that Executive will not:

a Directly, indirectly, or otherwise, own, manage, operate, control, serve as a consultant to, be employed by, participate in, or be connected, in any manner, with the ownership, management, operation or control of any business that competes with the Business or that competes with Employer or any of its affiliates or that is engaged in any type of business which, at any time during Executive's employment with Employer, Employer or any of its affiliates planned to develop;

b Hire, offer to hire, entice away or in any other manner persuade or attempt to persuade any officer, employee or agent of Employer or any of its affiliates to alter or discontinue a relationship with Employer or to do any act that is inconsistent with the interests of Employer or any of its affiliates;

c Directly or indirectly solicit, divert, take away or attempt to solicit, divert or take away any customers of Employer or any of its affiliates; or

d Directly or indirectly solicit, divert, or in any other manner persuade or attempt to persuade any supplier of Employer or any of its affiliates to alter or discontinue its relationship with Employer or any of its affiliates.

For the purposes of this Section 13, businesses that are deemed to compete with Employer include, without limitation, businesses engaged in manufacturing and marketing products or services that compete with the Company's products and services as of or within one (1) year of Executive's last day of employment with the Company. Notwithstanding Executive's obligations under this Section 13, Executive will be entitled to own, as a passive investor, up to five percent (5%) of any publicly traded company without violating this provision, subject to the limitations of the Company's insider trading policy.

Employer and Executive agree that: this provision does not impose an undue hardship on Executive and is not injurious to the public; that this provision is necessary to protect the business of Employer and its affiliates; the nature of Executive's responsibilities with Employer under this

Agreement require Executive to have access to confidential information which is valuable and confidential to all of the Business; the scope of this Section 13 is reasonable in terms of length of time and geographic scope; and adequate consideration supports this Section 13, including consideration herein.

14. Non-Disparagement. Executive agrees and covenants that he will not at any time make, publish or communicate to any person or entity or in any public forum any defamatory or disparaging remarks, comments, or statements concerning the Company or its businesses, or any of its employees, officers, and existing and prospective customers, suppliers, investors and other associated third parties.

This Section 14 does not, in any way, restrict or impede Executive from exercising protected rights to the extent that such rights cannot be waived by agreement or from complying with any applicable law or regulation or a valid order of a court of competent jurisdiction or an authorized government agency, provided that such compliance does not exceed that required by the law, regulation, or order. The Executive shall promptly provide written notice of any such order to the Chief Financial Officer.

15. Remedies. Notwithstanding other provisions of this Agreement regarding dispute resolution, Executive agrees that Executive's violation of any of Sections 10, 11, 12, 13, or 14 of this Agreement would cause Employer irreparable harm which would not be adequately compensated by monetary damages and that an injunction may be granted by any court or courts having jurisdiction, restraining Executive from violation of the terms of this Agreement, upon any breach or threatened breach of Executive of the obligations set forth in any of Sections 10, 11, 12, 13, or 14. The preceding sentence shall not be construed to limit Employer from any other relief or damages to which it may be entitled as a result of Executive's breach of any provision of this Agreement, including Sections 10, 11, 12, 13, or 14. Executive also agrees that a violation of any of Sections 10,11, 12, 13, or 14 would entitle Employer, in addition to all other remedies available at law or equity, to recover from Executive any and all funds, including, without limitation, wages, salary and profits, which will be held by Executive in constructive trust for Employer, received by Executive in connection with such violation.

16. Dispute Resolution. Except for the right of Employer and Executive to seek injunctive relief in court, any controversy, claim or dispute of any type arising out of or relating to Executive's employment or the provisions of this Agreement shall be resolved in accordance with this Section 16 regarding resolution of disputes, which will be the sole and exclusive procedure for the resolution of any employment disputes. This Agreement shall be enforced in accordance with the Federal Arbitration Act, the enforcement provisions of which are incorporated by this reference. Matters subject to these provisions include, without limitation, claims or disputes based on statute, contract, common law and tort and will include, for example, matters pertaining to termination, discrimination, harassment, compensation and benefits. Matters to be resolved under these procedures also include claims and disputes arising out of statutes such as the Fair Labor Standards Act, Title VII of the Civil Rights Act, the Age Discrimination in Employment Act, any state or local fair employment practices laws, and any other federal, state or local law, rule, ordinance or regulation, and all claims arising under tort, contract, and quasi-contract law,

including but not limited to claims of breach of an express or implied contract, personal injury, fraud and defamation. Nothing in this provision is intended to restrict Executive from submitting any matter to an administrative agency with jurisdiction over such matter.

a **Mediation**. Employer and Executive will make a good faith attempt to resolve any and all claims and disputes by submitting them to mediation in Seattle, Washington before resorting to arbitration or any other dispute resolution procedure. The mediation of any claim or dispute must be conducted in accordance with the then-current JAMS procedures for the resolution of employment disputes by mediation, by a mediator who has had both training and experience as a mediator of general employment and commercial matters. If the parties to this Agreement cannot agree on a mediator, then the mediator will be selected by JAMS in accordance with JAMS' strike list method. Within thirty (30) days after the selection of the mediator, Employer and Executive and their respective attorneys will meet with the mediator for one mediation session of at least four hours. If the claim or dispute cannot be settled during such mediation session or mutually agreed continuation of the session, either Employer or Executive may give the mediator and the other party to the claim or dispute written notice declaring the end of the mediation process. All discussions connected with this mediation provision will be confidential and treated as compromise and settlement discussions. Nothing disclosed in such discussions, which is not independently discoverable, may be used for any purpose in any later proceeding, unless otherwise provided by law. The mediator's fees will be paid in equal portions by Employer and Executive, unless Employer agrees to pay all such fees.

b **Arbitration**. If any claim or dispute has not been resolved in accordance with Section 15 (a), then the claim or dispute will be determined by arbitration in accordance with the then-current JAMS employment arbitration rules and procedures, except as modified herein. The arbitration will be conducted by a sole neutral arbitrator who has had both training and experience as an arbitrator of general employment and commercial matters and who is and for at least ten (10) years has been, a partner, a shareholder, or a member in a law firm. The arbitration shall be held in Seattle, Washington. If Employer and Executive cannot agree on an arbitrator, then the arbitrator will be selected by JAMS in accordance with Rule 15 of the JAMS employment arbitration rules and procedures. No person who has served as a mediator under the mediation provision, however, may be selected as the arbitrator for the same claim or dispute. Reasonable discovery will be permitted and the arbitrator may decide any issue as to discovery. The arbitrator may decide any issue as to whether or as to the extent to which any dispute is subject to the dispute resolution provisions in Section 16 and the arbitrator may award any relief permitted by law. The arbitrator must base the arbitration award on the provisions of Section 16 and applicable law and must render the award in writing, including an explanation of the reasons for the award. Judgment upon the award may be entered by any court having jurisdiction of the matter, and the decision of the arbitrator will be final and binding. The statute of limitations applicable to the commencement of a lawsuit will apply to the commencement of an arbitration under Section 16(b). There is no right or authority for any claims subject to this arbitration policy to be arbitrated on a class

or collective action basis or on any basis involving claims brought in a purported representative capacity on behalf of any other person or group of people similarly situated. Such claims are prohibited. Furthermore, claims brought by or against either the Executive or Company may not be joined or consolidated in the arbitration with claims brought by or against any other person or entity unless otherwise agreed to in writing by all parties involved.

c The arbitrator's fees will be paid in equal portions by Employer and Executive, unless Employer agrees to pay all such fees.

17. Fees Related to Dispute Resolution. Unless otherwise agreed, the prevailing party will be entitled to its costs and attorneys' fees incurred in any litigation or dispute relating to the interpretation or enforcement of this Agreement.

18. 409A. It is intended that any payment or benefit that is provided pursuant to or in connection with this Agreement that is considered to be deferred compensation subject to Section 409A of the Internal Revenue Code of 1986, as amended ("Code") shall be paid and provided in a manner, and at such time and form, as complies with the applicable requirements of Section 409A of the Code to avoid the unfavorable tax consequences provided therein for non-compliance. It is further intended that the payments hereunder shall, to the maximum extent permissible under Section 409A of the Code, be exempt from Section 409A of the Code under either (i) the exception for involuntary separation pay to the extent that all payments are payable within the limitations described in Treasury Regulation Section 1.409A-1(b)(9), or (ii) the short-term deferral exception described in Treasury Regulation Section 1.409A-1(b)(4) to the extent that all payments are payable no later than two and a half months after the end of the first taxable year in which the right to the payment is no longer subject to a substantial risk of forfeiture.

a If the Executive is a "specified employee" for purposes of Section 409A(a)(2)(B)(i) of the Code at such time, any payments to be made or benefits to be delivered in connection with the Executive's "Separation from Service" (as defined below) that constitute deferred compensation subject to Section 409A of the Code shall not be made until six months plus one day after the Executive's Separation from Service (the "409A Deferral Period") as required by Section 409A of the Code, provided that the payment of any such deferred compensation may be paid immediately following the Executive's death. Payments of any such deferred compensation otherwise due to be made in installments or periodically during the 409A Deferral Period shall be accumulated and paid in a lump sum as soon as the 409A Deferral Period ends, and the balance of the payment shall be made as otherwise scheduled.

b For purposes of this Agreement, all rights to payments and benefits hereunder shall be treated as rights to receive a series of separate payments and benefits to the fullest extent allowed by Section 409A of the Code.

c For purposes of this Agreement, with respect to the timing of any amounts that constitute deferred compensation subject to Section 409A of the Code that depends

on termination of employment or separation from service, termination of employment or separation from service shall mean a "separation from service" within the meaning of Section 409A of the Code where it is reasonably anticipated that no further services would be performed after such date or that the level of bona fide services the Executive would perform after that date (whether as an employee or independent contractor) would permanently decrease to a level less than or equal to twenty percent (20%) of the average level of bona fide services the Executive performed over the immediately preceding thirty-six (36) month period.

d If the period during which Executive has discretion to execute or revoke the release agreement described in this Agreement straddles two calendar years, the related severance and other benefits shall be paid in the second of the two calendar years, regardless of within which calendar year Executive actually delivers the executed release agreement to the Company, subject to the release agreement first becoming effective.

19. Disclosure. Executive agrees fully and completely to reveal the terms of this Agreement to any future employer or potential employer of Executive and authorizes Employer, at its election, to make such disclosure.

20. Representation of Executive. Executive represents and warrants to Employer that Executive is free to enter into this Agreement and has no contract, commitment, arrangement or understanding to or with any party that restrains or is in conflict with Executive's performance of the covenants, services and duties provided for in this Agreement, and is not contravene the terms of any statute, law, or regulation to which Executive is subject. Executive agrees to indemnify Employer and to hold it harmless against any and all liabilities or claims arising out of any unauthorized act or acts by Executive that, the foregoing representation and warranty to the contrary notwithstanding, are in violation, or constitute a breach, of any such contract, commitment, arrangement or understanding.

21. Conditions of Employment. Employer's obligations to Executive under this Agreement are conditioned upon Executive's timely compliance with requirements of the United States immigration laws.

22. Assignability. This Agreement shall not be assignable by Executive. This Agreement may be assigned by the Company to a company which is a successor in interest to substantially all of the business operations of the Company. Such assignment shall become effective when the Company notifies the Executive of such assignment or at such later date as may be specified in such notice. Upon such assignment, the rights and obligations of the Company hereunder shall become the rights and obligations of such successor company, provided that any assignee expressly assumes the obligations, rights and privileges of this Agreement.

23. Notices. Any notices required or permitted to be given hereunder are sufficient if in writing and delivered by hand, by facsimile, by registered or certified mail, postage prepaid, or by overnight courier, to Executive at Executive's home address as most recently updated in

Executive's Human Resources records, or to Biolife Solutions, Inc., 3303 Monte Villa Parkway, #310, Bothell, WA 98021, Attention: Chief Executive Officer. Notices shall be deemed to have been given (i) upon delivery, if delivered by hand or by email, (ii) seven days after mailing, if mailed, (iii) one business day after delivery, if delivered by courier, and (iv) one business day following receipt of an appropriate electronic confirmation, if by facsimile.

24. Severability. If any provision of this Agreement or compliance by any of the parties with any provision of this Agreement constitutes a violation of any law, or is or becomes unenforceable or void, then such provision, to the extent only that it is in violation of law, unenforceable or void, shall be deemed modified to the extent necessary so that it is no longer in violation of law, unenforceable or void, and such provision will be enforced to the fullest extent permitted by law. The Parties shall engage in good faith negotiations to modify and replace any provision which is declared invalid or unenforceable with a valid and enforceable provision, the economic effect of which comes as close as possible to that of the invalid or unenforceable provision which it replaces. If such modification is not possible, said provision, to the extent that it is in violation of law, unenforceable or void, shall be deemed severable from the remaining provisions of this Agreement, which provisions will remain binding on the parties.

25. Waivers. No failure on the part of either party to exercise, and no delay in exercising, any right or remedy hereunder will operate as a waiver thereof; nor will any single or partial waiver of a breach of any provision of this Agreement operate or be construed as a waiver of any subsequent breach; nor will any single or partial exercise of any right or remedy hereunder preclude any other or further exercise thereof or the exercise of any other right or remedy granted hereby or by law.

26. Publicity. The Executive hereby irrevocably consents to any and all uses and displays, by the Company and its agents, representatives and licensees, of the Executive's name., voice, likeness, image, appearance, and biographical information in, on or in connection with any pictures, photographs, audio and video recordings, digital images, websites, television programs and advertising, other advertising and publicity, sales and marketing brochures, books, magazines, other publications, CDs, DVDs, tapes, and all other printed and electronic forms and media throughout the world, at any time during or after the period of his employment by the Company, for all legitimate commercial and business purposes of the Company ("Permitted Uses") without further consent from or royalty, payment, or other compensation to the Executive. The Executive hereby forever waives and releases the Company and its directors, officers, employees, and agents from any and all claims, actions, damages, losses, costs, expenses, and liability of any kind, arising under any legal or equitable theory whatsoever at any time during or after the period of his employment by the Company, arising directly or indirectly from the Company's and its agents', representatives', and licensees' exercise of their rights in connection with any Permitted Uses.

27. Governing Law. Except as provided in Section 16 above, which arbitration agreement shall be governed by the Federal Arbitration Act, the validity, construction and performance of this Agreement shall be governed by the laws of the State of Washington without regard to the conflicts of law provisions of such laws. The parties hereto expressly recognize and

agree that the implementation of this Section 27 is essential in light of the fact that the Company has its corporate headquarters and its principal executive offices within the State of Washington, and there is a critical need for uniformity in the interpretation and enforcement of the employment agreements between the Company and its key employees. Other than any disputes that must be submitted to arbitration under Section 16 of this Agreement, the Snohomish County Superior Court in Washington shall have exclusive jurisdiction of any lawsuit arising from or relating to Executive's employment with, or termination from, the Company, or arising from or relating to this Agreement. Executive consents to such venue and personal jurisdiction and waives the defense of inconvenient forum to the maintenance of any action or proceeding in this venue.

28. Counterparts. This Agreement may be executed in counterpart in different places, at different times and on different dates, and in that case all executed counterparts taken together collectively constitute a single binding agreement, but the Agreement will not be effective until both Executive and Employer execute a copy of this Agreement.

29. Costs and Fees Related to Negotiation and Execution of Agreement. Each Party shall be responsible for the payment of its own costs and expenses, including legal fees and expenses, in connection with the negotiation and execution of this Agreement. Neither Party will be liable for the payment of any commissions or compensation in the nature of finders' fees or brokers' fees, gratuity or other similar thing or amount in consideration of the other Party entering into this Agreement to any broker, agent or third party acting on behalf of the other Party.

30. Entire Agreement. This instrument contains the entire agreement of the parties with respect to the relationship between Executive and Employer and supersedes all prior agreements and understandings between Executive and Employer, and there are no other representations or agreements other than as stated in this Agreement related to the terms and conditions of Executive's employment. This Agreement may be changed only by an agreement in writing signed by the party against whom enforcement of any waiver, change, modification, extension or discharge is sought and any such modification will be signed by an authorized representative of Employer.

IN WITNESS WHEREOF, the parties have duly signed and delivered this Agreement as of the day and year first above written.

BIOLIFE SOLUTIONS, INC.

By: _____
Name: Troy Wichterman
Title: Chief Financial Officer

EXECUTIVE

_____
Garrie Richardson

IN WITNESS WHEREOF, the parties have duly signed and delivered this Agreement as of the day and year first above written.

BIOLIFE SOLUTIONS, INC.

By: _____
Name: Troy Wichterman
Title: Chief Financial Officer

EXECUTIVE

_____
Garrie Richardson

EXHIBIT A

DISCLOSURE OF OUTSIDE BOARD OF DIRECTORS AND TRUSTEE POSITIONS

EXHIBIT 8

LIST OF INVENTIONS

SUBSIDIARIES OF THE REGISTRANT

Subsidiaries	Place of Incorporation
SAVSU Technologies, Inc.	Delaware
Arctic Solutions, Inc. dba Custom Biogenic Systems	Delaware
SciSafe Holdings, Inc.	Delaware
Global Cooling, Inc.	Delaware
Sexton Biotechnologies, Inc.	Delaware
BioLife B.V.	Netherlands

Consent of Independent Registered Public Accounting Firm

BioLife Solutions, Inc.
Bothell, Washington

We have issued our reports dated February 29, 2024, with respect to the consolidated financial statements and internal control over financial reporting included in the Annual Report of BioLife Solutions, Inc. on Form 10-K for the year ended December 31, 2023. We consent to the incorporation by reference of said reports in the Registration Statements of BioLife Solutions, Inc. on Forms S-3 (File Nos. 333-275646, 333-275645, 333-259249, 333-239637, 333-233912, 333-222433, and 333-208912) and on Forms S-8 (File Nos. 333-274016, 333-267391, 333-222437, 333-205101, and 333-189551).

/s/ Grant Thornton LLP

Bellevue, Washington
February 29, 2024

Consent of Independent Registered Public Accounting Firm

BioLife Solutions, Inc.
Bothell, Washington

We hereby consent to the incorporation by reference in the Registration Statements on Form S-3 (Nos. 333-259249, 333-239637, 333-233912, 333-222433, 333-208912, 333-275645, and 333-275646) and Form S-8 (Nos. 333-267391, 333-222437, 333-205101, 333-189551, and 333-274016) of BioLife Solutions, Inc. of our report dated March 31, 2022, relating to the consolidated financial statements for the year ended December 31, 2021, which appears in this Form 10-K.

/s/ BDO USA, P.C.

Seattle, WA
February 29, 2024

Exhibit 31.1

CERTIFICATION PURSUANT TO
RULE 13a-14(a) or RULE 13d-14(a) OF THE
SECURITIES EXCHANGE ACT OF 1934

I, Roderick de Greef, certify that:

1. I have reviewed this annual report on Form 10-K of BioLife Solutions, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal controls over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 29, 2024

/s/ Roderick de Greef
Roderick de Greef

Exhibit 31.2

CERTIFICATION PURSUANT TO
RULE 13a-14(a) or RULE 13d-14(a) OF THE
SECURITIES EXCHANGE ACT OF 1934

I, Troy Wichterman, certify that:

1. I have reviewed this annual report on Form 10-K of BioLife Solutions, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal controls over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 29, 2024

/s/ Troy Wichterman
Troy Wichterman

Exhibit 32.1

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report of BioLife Solutions, Inc. (the "Company") on Form 10-K for the fiscal year ended December 31, 2023, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Michael Rice, Chief Executive Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

1. The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and

2. The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: February 29, 2024

/s/ Roderick de Greef
Roderick de Greef
Chief Executive Officer and Chairman of
the Board of Directors

Exhibit 32.2

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report of BioLife Solutions, Inc. (the "Company") on Form 10-K for the fiscal year ended December 31, 2023, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Troy Wichterman, Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

1. The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and

2. The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: February 29, 2024

/s/ Troy Wichterman
Troy Wichterman
Chief Financial Officer

BIOLIFE SOLUTIONS, INC.

INCENTIVE-BASED COMPENSATION RECOVERY POLICY

1. Policy Purpose. The purpose of this BioLife Solutions, Inc. (the "Company") Incentive-Based Compensation Recovery Policy (this "Policy") is to enable the Company to recover Erroneously Awarded Compensation in the event that the Company is required to prepare an Accounting Restatement. This Policy is intended to comply with the requirements set forth in Listing Rule 5608 of the corporate governance rules of The NASDAQ Stock Market (the "Listing Rule") and shall be construed and interpreted in accordance with such intent. Unless otherwise defined in this Policy, capitalized terms shall have the meaning ascribed to such terms in Section 7. This Policy shall become effective on December 1, 2023. Where the context requires, reference to the Company shall include the Company's subsidiaries and affiliates (as determined by the Committee in its discretion).

2. Policy Administration. This Policy shall be administered by the Compensation Committee of the Board (the "Committee") unless the Board determines to administer this Policy itself. The Committee has full and final authority to make all determinations under this Policy. All determinations and decisions made by the Committee pursuant to the provisions of this Policy shall be final, conclusive and binding on all persons, including the Company, its affiliates, its stockholders and Executive Officers. Any action or inaction by the Committee with respect to an Executive Officer under this Policy in no way limits the Committee's actions or decisions not to act with respect to any other Executive Officer under this Policy or under any similar policy, agreement or arrangement, nor shall any such action or inaction serve as a waiver of any rights the Company may have against any Executive Officer other than as set forth in this Policy.

3. Policy Application. This Policy applies to all Incentive-Based Compensation received by a person: (a) on or after October 2, 2023, and beginning service as an Executive Officer; (b) who served as an Executive Officer at any time during the performance period for such Incentive-Based Compensation; (c) while the Company had a class of securities listed on a national securities exchange or a national securities association; and (d) during the three completed fiscal years immediately preceding the Accounting Restatement Date. In addition to such last three completed fiscal years, the immediately preceding clause (d) includes any transition period that results from a change in the Company's fiscal year within or immediately following such three completed fiscal years; provided, however, that a transition period between the last day of the Company's previous fiscal year end and the first day of its new fiscal year that comprises a period of nine to twelve months shall be deemed a completed fiscal year. For purposes of this Policy, Incentive-Based Compensation is deemed received in the Company's fiscal period during which the Financial Reporting Measure specified in the Incentive-Based Compensation award is attained, even if the payment or grant of the Incentive-Based Compensation occurs after the end of that period. For the avoidance of doubt, Incentive-Based Compensation that is subject to both a Financial Reporting Measure vesting condition and a service-based vesting condition shall be considered received when the relevant Financial Reporting Measure is achieved, even if the Incentive-Based Compensation continues to be subject to the service-based vesting condition.

4. Policy Recovery Requirement. In the event an Accounting Restatement is required, the Company must recover, reasonably promptly, Erroneously Awarded Compensation, in amounts determined pursuant to this Policy. The Company's obligation to recover Erroneously Awarded Compensation is not dependent on if or when the Company files the required restated financial statements. Recovery under this Policy with respect to an Executive Officer shall not require the finding of any misconduct by such Executive Officer or such Executive Officer being found responsible for the accounting error leading to an Accounting Restatement. In the event of an Accounting Restatement, the Company shall satisfy the Company's obligations under this Policy to recover any amount owed from any applicable Executive Officer by exercising its sole and absolute discretion in how to accomplish such recovery. The Company's

recovery obligation pursuant to this Section 4 shall not apply to the extent that the Committee, or in the absence of the Committee, a majority of the independent directors serving on the Board, determines that such recovery would be impracticable and:

a. The direct expense paid to a third party to assist in enforcing this Policy would exceed the amount to be recovered. Before concluding that it would be impracticable to recover any amount of Erroneously Awarded Compensation based on expense of enforcement, the Company must make a reasonable attempt to recover such Erroneously Awarded Compensation, document such reasonable attempt(s) to recover, and provide that documentation to the Stock Exchange; or

b. Recovery would likely cause an otherwise tax-qualified retirement plan, under which benefits are broadly available to employees of the registrant, to fail to meet the requirements of Section 401(a)(13) or Section 411(a) of the Code.

5. Policy Prohibition on Indemnification and Insurance Reimbursement. The Company is prohibited from indemnifying any Executive Officer or former Executive Officer against the loss of Erroneously Awarded Compensation. Further, the Company is prohibited from paying or reimbursing an Executive Officer for purchasing insurance to cover any such loss.

6. Required Policy-Related Filings. The Company shall file all disclosures with respect to this Policy in accordance with the requirements of the Federal securities laws, including disclosures required by U.S. Securities and Exchange Commission filings.

7. Definitions.

a. "Accounting Restatement" means an accounting restatement due to the material noncompliance of the Company with any financial reporting requirement under the securities laws, including any required accounting restatement to correct an error in previously issued financial statements that is material to the previously issued financial statements, or that would result in a material misstatement if the error were corrected in the current period or left uncorrected in the current period.

b. "Accounting Restatement Date" means the earlier to occur of: (i) the date the Board, a committee of the Board, or the officer or officers of the Company authorized to take such action if the Board action is not required, concludes, or reasonably should have concluded, that the Company is required to prepare an Accounting Restatement; and (ii) the date a court, regulator, or other legally authorized body directs the Company to prepare an Accounting Restatement.

c. "Board" means the board of directors of the Company.

d. "Code" means the U.S. Internal Revenue Code of 1986, as amended. Any reference to a section of the Code or regulation thereunder includes such section or regulation, any valid regulation or other official guidance promulgated under such section, and any comparable provision of any future legislation or regulation amending, supplementing, or superseding such section or regulation.

e. "Erroneously Awarded Compensation" means, in the event of an Accounting Restatement, the amount of Incentive-Based Compensation previously received that exceeds the amount of Incentive-Based Compensation that otherwise would have been received had it been determined based on the restated amounts in such Accounting Restatement, and must be

computed without regard to any taxes incurred or paid by the relevant Executive Officer; provided, however, that for Incentive-Based Compensation based on stock price or total stockholder return, where the amount of Erroneously Awarded Compensation is not subject to mathematical recalculation directly from the information in an Accounting Restatement: (i) the amount of Erroneously Awarded Compensation must be based on a reasonable estimate of the effect of the Accounting Restatement on the stock price or total stockholder return upon which the Incentive-Based Compensation was received; and (ii) the Company must maintain documentation of the determination of that reasonable estimate and provide such documentation to the Stock Exchange.

f. "Executive Officer" means the Company's president, principal financial officer, principal accounting officer (or if there is no such accounting officer, the controller), any vice-president of the Company in charge of a principal business unit, division, or function (such as sales, administration, or finance), any other officer who performs a policy-making function, or any other person who performs similar policy-making functions for the Company. An executive officer of the Company's parent or subsidiary is deemed an "Executive Officer" if the executive officer performs such policy making functions for the Company. For the avoidance of doubt, "Executive Officer" includes, but is not limited to, any person identified as an executive officer pursuant to Item 401(b) of Regulation S-K under the U.S. Securities Act of 1933, as amended.

g. "Financial Reporting Measure" means any measure that is determined and presented in accordance with the accounting principles used in preparing the Company's financial statements, and any measure that is derived wholly or in part from such measure; provided, however, that a Financial Reporting Measure is not required to be presented within the Company's financial statements or included in a filing with the U.S. Securities and Exchange Commission to qualify as a "Financial Reporting Measure." For purposes of this Policy, "Financial Reporting Measure" includes, but is not limited to, stock price and total stockholder return.

h. "Incentive-Based Compensation" means any compensation that is granted, earned, or vested based wholly or in part upon the attainment of a Financial Reporting Measure.

i. "Stock Exchange" means the national stock exchange on which the Company's common stock is listed.

8. Acknowledgement. Each Executive Officer shall sign and return to the Company, within 30 calendar days following the later of (i) the effective date of this Policy first set forth above or (ii) the date the individual becomes an Executive Officer, the Acknowledgement Form attached hereto as Exhibit A, pursuant to which the Executive Officer agrees to be bound by, and to comply with, the terms and conditions of this Policy.

9. Committee Indemnification. Any members of the Committee, and any other members of the Board who assist in the administration of this Policy, shall not be personally liable for any action, determination or interpretation made with respect to this Policy and shall be fully indemnified by the Company to the fullest extent under applicable law and Company policy with respect to any such action, determination or interpretation. The foregoing sentence shall not limit any other rights to indemnification of the members of the Board under applicable law or Company policy.

10. Severability. The provisions in this Policy are intended to be applied to the fullest extent of the law. To the extent that any provision of this Policy is found to be unenforceable or invalid under any applicable

law, such provision shall be applied to the maximum extent permitted, and shall automatically be deemed amended in a manner consistent with its objectives to the extent necessary to conform to any limitations required under applicable law.

11. Amendment; Termination. The Board may amend this Policy from time to time in its sole and absolute discretion and shall amend this Policy as it deems necessary to reflect the Listing Rule. The Board may terminate this Policy at any time.

12. Other Recovery Obligations; General Rights. To the extent that the application of this Policy would provide for recovery of Incentive-Based Compensation that the Company recovers pursuant to Section 304 of the Sarbanes-Oxley Act or other recovery obligations, the amount the relevant Executive Officer has already reimbursed the Company will be credited to the required recovery under this Policy. This Policy shall not limit the rights of the Company to take any other actions or pursue other remedies that the Company may deem appropriate under the circumstances and under applicable law. To the maximum extent permitted under the Listing Rule, this Policy shall be administered in compliance with (or pursuant to an exemption from the application of) Section 409A of the Code.

13. Successors. This Policy is binding and enforceable against all Executive Officers and their beneficiaries, heirs, executors, administrators or other legal representatives.

14. Governing Law; Venue. This Policy and all rights and obligations hereunder are governed by and construed in accordance with the internal laws of the State of Delaware, excluding any choice of law rules or principles that may direct the application of the laws of another jurisdiction. All actions arising out of or relating to this Policy shall be heard and determined exclusively in the Court of Chancery of the State of Delaware or, if such court declines to exercise jurisdiction or if subject matter jurisdiction over the matter that is the subject of any such legal action or proceeding is vested exclusively in the U.S. Federal courts, the U.S. District Court for the District of Delaware.

EXHIBIT A

BIOLIFE SOLUTIONS, INC.
INCENTIVE-BASED COMPENSATION RECOVERY POLICY

ACKNOWLEDGEMENT FORM

By signing below, the undersigned acknowledges and confirms that the undersigned has received and reviewed a copy of the BioLife Solutions, Inc. (the "Company") Incentive-Based Compensation Recovery Policy (the "Policy").

By signing this Acknowledgement Form, the undersigned acknowledges and agrees that the undersigned is and will continue to be subject to the Policy and that the Policy will apply both during and after the undersigned's employment with the Company. Further, by signing below, the undersigned agrees to abide by the terms of the Policy, including, without limitation, by returning any Erroneously Awarded Compensation (as defined in the Policy) to the Company to the extent required by, and in a manner consistent with, the Policy. Further, by signing below, the undersigned agrees that the terms of the Policy shall govern in the event of any inconsistency between the Policy and the terms of any employment agreement to which the undersigned is a party, or the terms of any compensation plan, program or agreement under which any compensation has been granted, awarded, earned or paid.

EXECUTIVE OFFICER

_____
Signature

_____
Print Name

_____
Date