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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the fiscal year ended December 31, 2019

☐ **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: **000-55264**

DYADIC INTERNATIONAL, INC.

(Exact name of registrant as specified in its charter)

Delaware	**45-0486747**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)

140 Intracoastal Pointe Drive , Suite 404
Jupiter, Florida 33477
(Address of principal executive offices) (Zip Code)

(561) 743-8333
(Registrant's telephone number, including area code)

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, par value $0.001 per share	DYAI	The NASDAQ Stock Market LLC

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

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

Indicate by check mark if 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 (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such 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 is a shell company (as defined in Rule 12b-2 of the Act). Yes ☐ No ☒

The aggregate market value of the voting and non-voting common equity held by non-affiliates of the registrant (27,111,157 shares) computed by reference to the closing price of $6.26 as reported on the NASDAQ Stock Markets on June 30, 2019 (the last business day of the registrant's most recently completed second fiscal quarter) was approximately $169.7 million. Shares of the registrant's common stock held by executive officers, directors, and their affiliates have been excluded from this calculation. This determination of affiliate status is not necessarily a conclusive determination for other purposes.

As of March 29, 2020, the registrant had27,359,157 shares of common stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

None.

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CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

Information (other than historical facts) set forth in this Annual Report contains forward-looking statements within the meaning of the Federal securities laws, which involve many risks and uncertainties that could cause our actual results to differ materially from those reflected in the forward-looking statements. Forward-looking statements generally can be identified by use of the words “expect,” “should,” “intend,” “anticipate,” “will,” “project,” “may,” “might,” “potential,” or “continue” and other similar terms or variations of them or similar terminology. Such forward-looking statements are included under Item 7 “Management’s Discussion and Analysis”. Dyadic International, Inc., and its subsidiaries cautions readers that any forward-looking information is not a guarantee of future performance and that actual results could differ materially from those contained in the forward-looking information. Such statements reflect the current views of our management with respect to our operations, results of operations and future financial performance. Forward-looking statements involve many risks, uncertainties or other factors within and/or beyond Dyadic’s control. These factors include, but are not limited to, (1) general economic, political and market conditions; (2) our ability to generate the required productivity, stability, purity, performance, cost, safety and other data necessary to carry out and implement our biopharmaceutical research and business plans and strategic initiatives; (3) our ability to retain and attract employees, consultants, directors and advisors; (4) our ability to implement and successfully carry out Dyadic’s and third parties’ research and development efforts; (5) our ability to obtain new license and research agreements; (6) our ability to maintain our existing access to, and/or expand access to third party contract research organizations in order to carry out our research projects for ourselves and third parties; (7) competitive pressures and reliance on our key customers and collaborators; (8) the pharmaceutical and biotech industry, governmental regulatory and other agencies’ willingness to adopt, utilize and approve the use of the C1 gene expression platform; (9) the risk of theft, misappropriation or expiration of owned or licensed proprietary and intellectual property, genetic and biological materials owned by us and/or Danisco US, Inc. and VTT Technical Research Centre of Finland Ltd; (10) speculative nature and illiquidity of equity securities received as consideration from sub-licenses; (11) our expectations concerning the impact of the novel coronavirus identified as “COVID-19” on our operating results; and (12) other factors discussed in Dyadic’s publicly available filings, including information set forth under the caption “Risk Factors” in this Annual Report. We caution you that the foregoing list of important factors is not exclusive. The forward-looking statements are based on our beliefs, assumptions and expectations of future performance, considering the information currently available to us. These statements are only predictions based upon our current expectations and projections about future events. There are important factors that could cause our actual results, level of activity, performance or achievements to differ materially from the results, level of activity, performance or achievements expressed or implied by the forward-looking statements. Moreover, we operate in a highly regulated, competitive and rapidly changing environment. Our competitors have far greater resources, infrastructure and market presence than we do which makes it difficult for us to enter certain markets, and/or to gain or maintain customers. New risks emerge from time to time and it is not possible for our management to predict all risks, nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements we may make. Before investing in our common stock, investors should carefully read the information set forth under the caption “Risk Factors” and elsewhere in this Annual Report which could have a material adverse effect on our business, results of operations and financial condition.

You should not rely upon forward-looking statements as predictions of future events. Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee that the future results, levels of activity, performance and events and circumstances reflected in the forward-looking statements will be achieved or occur. Except as required by law, we undertake no obligation to publicly update any forward-looking statements for any reason after the date of this Annual Report to conform these statements to actual results or to changes in our expectations.

We qualify all our forward-looking statements by these cautionary statements. In addition, with respect to all our forward-looking statements, we claim the protection of the safe harbor for forward-looking statements contained in the Private Securities Litigation Reform Act of 1995.

PART I

Item 1. Business

Overview

Dyadic International, Inc. (“Dyadic”, “we”, “us”, “our” or the “Company”) is a global biotechnology platform company based in Jupiter, Florida with operations in the United States, a satellite office in the Netherlands and currently two research organizations performing services under contract to Dyadic in Finland and Spain. Over the past two decades, the Company has developed a gene expression platform for producing commercial quantities of industrial enzymes and other proteins, and has previously licensed this technology to third parties, such as Abengoa Bioenergy, BASF, Codexis and others,

for use in industrial (non-pharmaceutical) applications. This technology is based on the *Thermothelomyces heterothallica* (formerly *Myceliophthora thermophila*) fungus, which the Company named C1. The C1 technology is a robust and versatile fungal expression system for the development and production of enzymes and other proteins.

On December 31, 2015, the Company sold its industrial technology business to DuPont Danisco ("DuPont"), the industrial biosciences business of DuPont (NYSE: DD) for $75 million (the "DuPont Transaction"). As part of the DuPont Transaction, Dyadic retained co-exclusive rights to the C1 technology for use in all human and animal pharmaceutical applications, and currently has the exclusive ability to enter into sub-license agreements (subject to the terms of the license and to certain exceptions). DuPont retained certain rights to utilize the C1 technology in pharmaceutical applications, including the development and production of pharmaceutical products, for which it will be required to make royalty payments to Dyadic upon commercialization. In certain circumstances, Dyadic may owe a royalty to either DuPont or certain licensors of DuPont, depending upon whether Dyadic elects to utilize certain patents either owned by DuPont or licensed in by DuPont.

After the DuPont Transaction, the Company has been focused on the biopharmaceutical industry, specifically in further improving and applying the proprietary C1 technology into a safe and efficient gene expression platform to help speed up the development, lower production costs and improve the performance of biologic vaccines and drugs at flexible commercial scales. We believe that the C1 technology could be beneficial in the development and manufacturing of human and animal vaccines and drugs, such as virus-like particles (VLPs), protein antigens, monoclonal antibodies (mAbs), Bi-Specific antibodies, Fab antibody fragments, Fc-Fusion proteins, as well as other therapeutic enzymes and proteins. The Company is aiming to develop products such as innovative vaccines and drugs, biosimilars and/or biobetters.

Effective April 17, 2019, our common stock began trading on the NASDAQ Stock Market LLC's NASDAQ Capital Market, under the symbol "DYAI". Prior to the Company's uplisting to the NASDAQ, the Company's common stock traded on the OTCQX market.

Our Technology

The Company believes that the C1 cell line is unique compared to traditional filamentous fungal cells, and the C1 gene expression platform has the potential to be used in the discovery, development and manufacturing of biologic medicines and vaccines, given its anticipated competitive advantages compared to certain other leading pharmaceutical expression systems, such as CHO ("Chinese Hamster Ovary") cells. Specifically, the C1 cell line has:

- A unique morphology which translates into better growth conditions and very high secreted protein yield and has been used in industrial production for 20 years at up to 500,000-liter scale.
- Several significant potential operational advantages include:
  - High productivity and low-cost synthetic media for the upstream fermentation steps;
  - Potential for greater protein yield for certain downstream processing steps due to the high purity of secreted proteins;
  - No virus-like particles or virus carryover from production cells thus eliminating the two purification steps typically involved in CHO production; and
  - Low pH viral inactivation and virus nano filtration.
- Wide pH and temperature operating conditions which has the potential to translate into more reliable and robust production processes.
- Shorter production cycle times than CHO which translates into the following time savings:
  - A significant reduction in the duration of the inoculation steps in comparison to CHO can be achieved with C1 fermentation;
  - Fermentation cycle time of 5-7 days which is one-half (1/2) to one-third (1/3) of the typical fermentation production time of CHO.
- C1's unique glycan structure is expected to facilitate more rapid glycoengineering work than that of yeast and other fungi that create cell lines having human types of N-Glycan pattern. This advantage has already enabled us to reach important milestones towards our goal to develop cell lines having human types of defined glycans structure, including Man3, G0, G0F, G2 and G2F.

Competition

We believe our C1 gene expression platform has the potential to become a viable alternative to certain of the leading expression systems currently used in the biopharmaceuticals industry to produce vaccines, monoclonal antibodies, and other therapeutic proteins. C1 has some inherent benefits and potential competitive advantages compared to some of the industry standard expression systems for biologics such as CHO cells, *E. coli*, Pichia, and Baculovirus as discussed below:

- Mammalian cells: They are currently the preferred hosts for most complex protein therapeutics due mainly to their ability to produce proteins with human-like glycosylation. This market is dominated by CHO cells. Disadvantages include the relatively longer time required for cell line development, and fermentation, expensive media and comparably low protein yields.
- Bacterial: Bacteria such as *E. coli* are currently the easiest, cheapest, and quickest method for recombinant protein expression and are often used in laboratory settings as well as commercial production of certain non-glycosylated proteins. However, they produce toxic and pyrogenic cell wall components that may make them less suitable for the production of pharmaceutical or food components.
- Yeast: In contrast to bacteria, yeast, such as Pichia, do not produce potentially toxic and pyrogenic cell wall components. Further, the genetic tools for yeast development are advanced and enable continued engineering of new strains that may become more suitable than CHO cell lines. Disadvantages include the comparably lower protein yields than C1 and hyper-glycosylation.
- Insect cells: Insect cells offer protein expression with posttranslational modifications similar to mammalian cells, ease of scale-up, and simplified cell growth readily adapted to high-density suspension culture for large-scale expression. Baculovirus expression systems are used for producing recombinant protein, especially for vaccine antigens. Disadvantages include the comparably lower protein yields than C1.

We believe that our C1 technology has the potential to become an alternative gene expression platform to CHO, *E.coli*, yeast, insect cells, and other organisms currently in use for developing and manufacturing protein-based biologics because of C1's potential speed of development, higher protein yields, and low production costs, among other potential benefits.

Our Industry and Markets

Based on research results from our collaborations and our ongoing discussions with leading pharmaceutical and biotech companies, contract manufacturing organizations (CMOs), leading academic institutions, as well as U.S. and foreign governmental agencies, we continue to believe that the biopharmaceutical market is an attractive opportunity to apply the C1 technology. The Company continues to evaluate potential opportunities to expand the application of our C1 technology, and is currently focused on penetrating the biologics market in the following segments:

- Recombinant vaccines market for animal health
- Recombinant vaccines market for human health
- New innovative biotherapeutics
- Biosimilars / Biobetters non-Glycosylated protein market
- Biosimilars / Biobetters Glycosylated protein market
- Metabolites / Primary and Secondary
- Diagnostic

The use of biologic medicines, such as antibodies, is growing significantly. However, biologic medicines are very expensive for both patients and health care systems, and the Company believes that such high cost is in part the result of the following bottlenecks in the development and manufacture of biologic medicines:

- Low yielding and often slower gene expression systems currently used by the biopharmaceutical industry
- Expensive, often royalty stacked, cell-media in the case of CHO cell lines
- Long production time in the case of stable CHO cell lines
- Previous underfunded development efforts for a more efficient next-generation gene expression system
- The biopharmaceutical industry's reluctance to utilize certain advances to develop next-generation gene expression systems for bio-manufacturing, such as application of cutting-edge synthetic biology, metabolic and glyco-engineering tools to generate more productive microorganisms with differentiating properties

The Company believes that the biopharmaceutical industry may benefit from a next-generation expression platform that is safe, reliable, productive and cost effective as such platform would facilitate the production of more affordable biologic medicines in larger volumes using smaller fermentation vessels. The Company also believes that by further engineering our C1 technology it will have the potential to be an alternative to CHO and other expression systems for certain biologic vaccines, drugs and other biologic products.

Potential Opportunity to Use C1 in Drug Discovery and Early Development Process

While our focus has been and remains on developing stable C1 cell lines to speed up the development, lower production costs, improve the performance of biologic vaccines and to develop drugs at flexible commercial scales, we have identified biologics drugs discovery and early development process as one area where C1 also may add value based on our discussions with various pharmaceutical and biotech companies. This area includes the biologics drug discovery and early development process requires sufficient levels of proteins to be expressed as quickly as possible in order to identify new drug candidates within a limited time. Currently, HEK 293 cells (human embryonic kidney cells) are commonly used for this application. Given that C1 cells have demonstrated the capability to express and produce comparable and even larger quantities of protein than HEK 293 cells, we believe that C1 has the potential to help overcome certain protein expression challenges in the biologics drug discovery and development stages. We have had discussion with third parties, including our existing collaborators, to identify additional avenues to potentially adapt our C1 technology for this application.

Sub-licensing Agreements

Novovet and Luina Bio Sub-License

On April 26, 2019, the Company entered into a sub-license agreement (the "Luina Bio Sub-License Agreement") with Luina Bio Pty Ltd. ("Lunia Bio") and Novovet Pty Ltd ("Novovet"). Under the terms of the Luina Bio Sub-License Agreement, the Company granted to Novovet, subject to the terms of the license agreement entered into between the Company and Danisco US, Inc. on December 31, 2015, a worldwide sub-license to certain patent rights and know-how related to Dyadic's proprietary C1 gene expression platform for the exclusive and sole purpose of commercializing certain targeted antigen and biological products for the prevention and treatment of various ailments for companion animals.

In consideration of the license granted pursuant to the Luina Bio Sub-License Agreement, Dyadic received a 20% equity interest in Novovet ("Novovet Up-Front Consideration") in accordance with the terms of Novovet's Shareholder Agreement, and will receive a percentage of royalties on future net sales and non-sales revenue, if any, which incorporates Dyadic's proprietary C1 gene expression platform.

To date Novovet has not raised the capital required to move this opportunity forward, and therefore, the Company has not transferred its C1 technology to Novovet.

Alphazyme Sub-License

On May 5, 2019, the Company entered into a sub-license agreement (the "Alphazyme Sub-License Agreement") with Alphazyme, LLC ("Alphazyme"). Under the terms of the Alphazyme Sub-License Agreement, the Company granted to Alphazyme, subject to the terms of the license agreement entered into between the Company and Danisco US, Inc. on December 31, 2015, a sub-license to certain patent rights and know-how related to Dyadic's proprietary C1 gene expression platform for the purpose of commercializing certain pharmaceutical products that are used as reagents to catalyze a chemical reaction to detect, measure, or be used as a process intermediate to produce a nucleic acid as a therapeutic or diagnostic agent.

In consideration of the license granted pursuant to the Alphazyme Sub-License Agreement, Dyadic will receive a 7.5% ownership interest in Alphazyme ("Alphazyme Up-Front Consideration") upon the successful transfer of C1 technology, additional milestone payments and a percentage of royalties on net sales, if any, which incorporate Dyadic's proprietary C1 gene expression platform. The Alphazyme Sub-License Agreement has an initial exclusivity period of 18 months ("Exclusivity Period") beginning on the date the technology transfer has been completed. Following the Exclusivity Period, the sub-license will be nonexclusive. At any time prior to the expiration of the Exclusivity Period, Alphazyme has the option to extend the Exclusivity Period for an additional twelve (12) months in return for an additional 2.5% ownership interest in Alphazyme. A portion of the technology transfer has been completed. However, Alphazyme has not signed off on the remaining portion of the technology. Efforts to complete the last step of their internal qualification of C1 has been delayed partly due to the travel restriction under the COVID-19 pandemic.

Our Research Partners and Contract Research Organizations (CROs)

Currently, the Company is conducting its C1 platform research programs at the following two contract research organizations:

(1) Research and Development Agreement with VTT Technical Research Centre of Finland, Ltd ("VTT")

Since September 2016, the Company has been working with VTT Technical Research Centre of Finland, Ltd, a third-party contract research organization, to further modify and improve the Company's C1 technology to ensure a safe and efficient expression system for use in speeding up the development and lowering the cost of manufacturing pharmaceutical products and processes. VTT is one of the leading research and technology organizations in Europe, and it has conducted research and development on fungi and other microorganisms for more than three decades. We believe that VTT has the required skills and experience in fungal strain development to help us further develop our C1 technology and achieve our goal and objectives.

On June 28, 2019, the Company extended its research and development agreement with VTT through June 2022. Under the terms of the extended agreement, the Company will pay VTT a total of EUR €2.52 million over the next three years to continue developing Dyadic's C1 fungal expression system for therapeutic protein production, including C1 host system improvement, glycoengineering, and management of third-party target protein expression projects. VTT is entitled to an additional success bonus up to EUR €450,000 based on the technical targets stipulated in the extended agreement. Meanwhile, Dyadic entered into a license agreement with VTT which granted Dyadic and its sublicensees the right to use synthetic C1 promoters developed by VTT, for an access fee. On October 25, 2019, the Company expanded the agreement with VTT to pay an additional EUR €690,000 over the next 1.5 years to reinforce its glycoengineering work. Dyadic retains the right to terminate the agreement with 90 days' notice.

(2) Collaboration Agreement with BDI

On June 30, 2017, the Company entered into a strategic Research Services Agreement (the "RSA") with Biotechnology Developments for Industry in Pharmaceuticals, S.L.U. ("BDI Pharma"), and a Service Framework Agreement (the "SFA", and together with the RSA, the "R&D Agreements"), with VLP The Vaccines Company, S.L.U. ("VLPbio"), both of which companies are subsidiaries of Biotechnology Developments for Industry, S.L., a Spanish biotechnology company ("BDI Holdings" and together with BDI Pharma and VLPbio, "BDI").

The R&D Agreements provided a framework under which the parties engaged in a research and development collaboration encompassing several different projects over approximately a two-year period, with a focus on advancing Dyadic's proprietary C1 technology in the development of next-generation biological vaccines and drugs. The goal of these projects was to leverage the BDI team's previous C1 gene expression and industrial fermentation scale-up and commercialization experience with yeast and filamentous fungi processes to further advance Dyadic's proprietary C1 technology with the potential to commercialize certain biopharmaceutical product(s). All data and products developed from the funded research projects will be owned by Dyadic. BDI also conducted gene expression and media development work coupled with fermentation optimization to improve the C1 technology's production process for manufacturing vaccines, antibodies as well as therapeutic enzymes and proteins. Additionally, BDI conducted research and development on our behalf to express and produce a variety of C1-based biologic products to demonstrate C1's capabilities and to identify potential animal and human pharmaceutical products that could be out licensed to third parties for commercialization. Those proteins included mAbs, Fc-Fusion constructs, Bi-specific antibodies, Fabs, VLP and other proteins.

Upon closing of the BDI transaction, the Company paid EUR €1 million in cash to engage BDI to develop designated C1 based product candidates and further improve the C1 manufacturing process, in consideration of which Dyadic also received a 16.1% equity interest in BDI Holdings and a 3.3% equity interest in VLPbio. BDI was obligated and did spend a minimum amount of EUR €936,000 over two years in the conduct of the research and development project under the RSA. If the research and development activities produce a product that is selected by Dyadic for additional development and commercialization and BDI agrees to enter into an agreement with Dyadic for such additional development and commercialization, Dyadic expects to share with BDI a range of between 50% and 75% of the net income from such selected product, depending upon the amount of BDI's aggregate spend in the development of the selected product, with a minimum aggregate spend by BDI of EUR €1 million for a 50% share and EUR €8 million for a 75% share. If BDI does not enter into an agreement with Dyadic for such additional development and commercialization of the selected product, then Dyadic will pay to BDI the first EUR €1.5 million of the net income from Dyadic's commercialization, if any, of the selected product. In addition, under the SFA, Dyadic was obligated to purchase from BDI at least USD $1 million (the "SFA Commitment") in contract research services specified by Dyadic over two years following the closing of the BDI transaction.

As of December 2019, BDI has completed its services and the Company has fulfilled its funding obligation under the SFA Commitment. All research projects under the R&D Agreements were completed. Subsequent to the completion of the RSA, the Company has engaged BDI to conduct certain other research activities on its behalf and anticipates continuing do to so from time to time.

Our Research and Development ("R&D") Programs

The Company's current research and development activities are focused on the following biopharmaceutical programs:

(1) Internal Research Programs

C1 Production Host Improvement Programs

The Company has research and development agreements with VTT and others to further improve its C1 technology to become an even more robust, versatile and efficient therapeutic protein production platform which may be used to help bring biologic vaccines and drugs to market at lower cost with potentially improved performance. Ongoing projects include, among other things: (i) improving the genome sequence-accuracy for the application of system biology tools, (ii) improving the C1 genetic tools, (iii) further reducing the background protease(s) levels by identifying and deleting certain protease genes and/or modifying C1 fermentation processes, (iv) developing high expression C1 cell lines by genetic modifications where one or more specific integration sites are being used to increase productivity and to what we expect will help with future regulatory approvals, and (v) modifying the glycosylation pathway of C1 cells in order for C1 to express certain mAbs and other proteins with mammalian like glycosylation structures and to eliminate or modify certain unwanted glycan structures such as O-glycosylation.

We have made certain improvements to our C1 technology platform through our collaborations with VTT, BDI and through our other research projects.

- Data demonstrating C1's capability to express a variety of vaccines and therapeutic proteins including monoclonal antibodies (mAbs), Fab antibody fragments, Fc-Fusion proteins, and difficult-to-express genes such as virus-like particles (VLPs), Bi-Specific antibodies, and antigens, at a higher productivity level than other gene expression platforms.
- Data from a large pharma collaborator demonstrating that the binding kinetics of mAbs produced from C1 are virtually indistinguishable from the binding kinetics of reference mAbs which were produced in CHO cells.
- Expressed a third party bi-specific antibody which was assayed by the third party in an in vitro cellular activity assay which indicated that dose response curves for the C1 expressed bi-specific antibody were very similar to the CHO expressed bi-specific antibody.
- Expressed a third party monoclonal antibody which was assayed by a third party who reported that the neutralizing activity assay demonstrated great similarity between C1-produced mAb and CHO-produced mAb.
- Generated C1 strains that have lower background protease activity, while remaining healthy and viable.
- Created a C1 protease expression library to quickly identify and eliminate protease genes to improve protein stability and productivity.
- Developed and used a variety of novel genetic elements as well as molecular and metabolic engineering tools that can be used in biologic vaccine and drug development and manufacturing.
- Demonstrated that C1 can be grown not only in stainless steel fermenters, but also in single use bioreactors (SUBs). We conducted multiple bioreactor experiments using a 50L XDR-50MO Single Use GE bioreactor which showed that the expression level (productivity of 9.2 g/l for an early Certolizumab process) was virtually identical to the productivity achieved in the Stainless-Steel Bioreactor.
- Improved C1 fed batch fermentation process with low cost defined media, as compared to the expensive, complex growth media being used with CHO cells. Continued optimizing both the media and the fermentation process to further increase mAb and other protein yields and productivity.
- Achieved higher productivity levels than objectives for several target proteins that were developed for 3 rd parties.

Glycosylated Therapeutic Programs

The Company's longer-term objective, which is ongoing and requires substantially more time and capital is to apply the C1 technology for the large therapeutic glycoprotein market. We believe that the rapid advances being made in genomics

and synthetic biology, make the C1 fungal cell line a promising candidate to further engineer glycosylation pathways: (i) to produce therapeutic proteins having human like glycoforms structures such as G0, G2, G0F, and G2F; (ii) to reduce or eliminate O-glycosylation; and (iii) to create potentially improved immunogenicity in the case of vaccines.

The initial steps to develop C1 strains that produce mAbs with mammalian-like glycosylation are progressing at VTT. So far, we have achieved human-like glycan structure site occupancy level of approximately 95% for G0 and approximately 76% for G2. In addition to G0, only Man3 and GlcNAcMan3 remain in the glycan pattern. The next step is to reach C1 cell lines that produce proteins with G0F and G2F glycan structures. Based on research results we have to date, the Company believes that our C1 technology has the potential to become a useful platform for the development and production of therapeutic glycoproteins with human-like or potentially even superior glycan structures. We believe that, if successful, the glycoengineering of C1 cells may help to position the C1 technology to be an important production platform for developing and manufacturing glycosylated antibodies and other glycoproteins. These initial glycoengineered C1 cells have to date shown reduced gene expression levels when compared to the non-glycoengineered C1 cells. Several approaches are now being applied to reach our main goal – the production of therapeutic proteins by C1 having human-like glycoforms structure at high levels.

Although we have made substantial progress working with VTT since September 2016, there remains additional work and data needed to develop our C1 technology into a potentially safe and efficient expression system for use in speeding up the development and lowering the cost of animal and human biologic vaccines and drugs.

(2) Animal Health Programs

Biologic Vaccines Programs - ZAPI

We continued our participation in the ZAPI vaccination program. ZAPI (www.zapi-imi.eu) is a research and development project funded as part of IMI EU program (Zoonoses Anticipation and Preparedness Initiative (ZAPI project; IMI Grant Agreement n°115760)), with the assistance and partial financial support of IMI and the European Commission, and in-kind contributions from EFPIA partners. This project aims to develop a suitable platform for the rapid development and production of vaccines and protocols to fast-track registration of product developed to combat pandemic Zoonotic diseases that have the potential to affect human and animal populations.

We believe that our efforts to demonstrate C1's ability to express antigens at target levels set by the ZAPI consortium have been met or exceeded. For example, we were asked to focus on expressing a specific antigen against the Schmallenberg virus (SBV), and the data obtained so far has indicated promising high expression levels of this antigen which we anticipate will be transferred to other groups within ZAPI who may carry out additional animal trials. Although the target expression level of the antigen against the Schmallenberg virus (SBV) was stated by ZAPI at the beginning of the project to be 100 mg/l, we have been able to demonstrate C1 expression levels of this antigen at approximately 17 times (17X) that level or approximately 1780 mg/l. In addition, the ELISA and Western Blot's analysis of the results confirmed that the C1-expressed protein has similar performance as antigen produced by baculovirus and it was correctly folded. The high productivity level reached with the C1 expressed SBV antigen has significantly contributed to the recent ZAPI animal trials as well as to the achievement of one of the goals of the ZAPI project, which is to produce a sufficient number of vaccination doses quickly, at low cost using reduced fermentation capacity.

The Company's C1-expressed antigens were tested in mice and cattle studies within the ZAPI project, and the resulting data indicated that the C1 technology produced antigen generated an immune response in both mice and cattle that protected the animals and showed no negative effects on the health of animals without any clinical signs of disease. We anticipate that more immunogenicity and safety testing will be conducted within the ZAPI project in the future. As a result, ZAPI expanded the scope of Dyadic's involvement in the program, and provided additional funding from the ZAPI consortium in support of production of the two additional targets.

Other Animal Health Projects and Collaborations

In 2019, we entered into two animal health collaborations with two of the top four leading animal health companies to use the C1 technology for expression and production of therapeutic proteins for companion and farm animal diseases. On October 28, 2019, we expanded one of the above research collaborations to express one additional protein.

Under these collaborations, Dyadic will apply its proprietary and patented C1 gene expression platform to express different types of proteins to be evaluated by our collaborators for potential use in their research and commercial projects.

(3) Israel Institute for Biological Research (IIBR)

In the first quarter of 2018, we entered into a research and development collaboration with the Israel Institute for Biological Research ("IIBR") to further advance our C1 expression platform for the development and manufacture of recombinant vaccines and neutralizing agents comprising targeted antigens and monoclonal antibodies (biologics), to combat emerging diseases and threats.

This project provides us with an opportunity to work with a renowned organization, aiming to integrate our C1 gene expression platform into an end to end product development and manufacturing capability to produce biologics, and if possible, to get some of these biologics through the regulatory approval process. All of the collaboration work is performed at IIBR's laboratories using their in-house resources.

Through this collaboration with the IIBR, a proprietary IIBR Fc-fusion enzyme known as Acetyl Choline Esterase enzyme, has been expressed using our C1 technology. This Acetyl Choline Esterase enzyme has previously been shown to provide certain countermeasures against nerve agents such as sarin and VX gas which are toxic and rapidly acting chemical warfare agents. The recombinant IIBR Fc-fusion enzyme, produced in HEK293 cells, has been shown to provide longer lasting protection than the common Acetyl Choline Esterase.

(4) Sanofi-Aventis Program

In September 2018, we entered into a funded proof of concept research collaboration with Sanofi-Aventis Deutschland GmbH, a company of the Sanofi group, one of the World's top tier biopharmaceutical companies. This research collaboration is to apply our C1 platform to express multiple types of therapeutic compounds to overcome specific gene expression challenges and to further demonstrate the potential of C1 to become a platform of choice for manufacturing protein-based vaccine and biologic drugs.

We have completed our tasks under the research collaboration plan, and C1 was successful in expressing more than half of the seven proteins at or above the production level goals initially set by Sanofi-Aventis. Sanofi-Aventis is in the process of evaluating the expression results the expressed proteins and their analytical data, and we are in discussion with them regarding next steps.

(5) Research and Commercialization Collaboration with Serum Institute of India

On May 7, 2019, the Company entered into a research and commercialization collaboration with Serum Institute of India Pvt., Ltd ("Serum"). Under the terms of this collaboration, Serum anticipates applying Dyadic's C1 technology to express up to twelve (12) antibodies and vaccines and will undertake commercially best efforts to fully develop and commercialize the proteins expressed from Dyadic's C1 technology. Dyadic has agreed to grant Serum the option to obtain an exclusive commercial sub-license for up to twelve (12) proteins in return for certain research funding, milestone payments and royalties for fifteen (15) years from the date of the first commercial sale. Currently, we are working on re-expressing those antibody genes provided by Serum that have already been expressed in earlier generations of C1 cells, by using one or more of the emerging glycoengineered C1 cell lines in order to allow Serum to carry out further purification and analytical tests to reach the quality attributes that are necessary for clinical trials and commercial manufacturing.

(6) Potential Commercialization Program at BDI

Under our collaboration program with BDI, BDI was able to express a Virus Like Particle (VLP) and a basket of therapeutic proteins that are commonly used as animal and human vaccines and drugs, either glycosylated or non-glycosylated proteins (including among others, mAbs, Fabs, and bi-specific mAbs.) to determine which, if any, of these proteins might be potential candidates for future commercialization.

We were able to demonstrate that C1 is capable of expressing certain types of antibodies at various yield levels as well as the ability to express other therapeutic proteins, which are difficult-to-express by other cell lines. In particular:

- A Secreted Virus Like Particle (VLP) monomers was expressed at 2.27g/l by C1 and appears to have been properly assembled to form a 60-mers protein structure. Transmission Electronic Microscopy (TEM) analysis confirmed the correct structure of the VLP.
- Our first and initial attempt to express Blinatumomab, a bi-specific drug, was successful as the initial unoptimized expression level was 0.6 g/l (0.12 g/l/d). The initial expression level of Blinatumomab is a start in generating data

that we believe will help us to demonstrate the potential of C1 to be used as a production host for expressing more complex and difficult to express drugs such as bi-specific antibodies.

- We have reached the expression level of the antibody fragment Certolizumab using C1 as high as 12.0 g/l in 112 hours (2.6 g/l/d). Certolizumab is a constituting part of Cimzia Pegol, which is a recombinant, humanized and pegylated Fab antibody fragment. We are evaluating what further development work is required to pursue for optimizing the upstream and the downstream processes in order to establish a well-defined production process that may be ready for non-clinical and clinical registration studies. In addition, based on certain further modifications to the C1 cell line, such as the reduction or elimination of O Glycans, we may choose to conduct a variety of comparability and quality analytics with the C1 expressed Certolizumab together with our partner BDI and potentially other third parties.We have reached the expression level of the antibody fragment Certolizumab using C1 as high as 12.0 g/l in 112 hours (2.6 g/l/d). Certolizumab is a constituting part of Cimzia Pegol, which is a recombinant, humanized and pegylated Fab antibody fragment.

(7) Monoclonal antibodies (mAbs), Fc-Fusion, and Fab

The Company continues to develop relationships with business and research partners in the human biopharmaceutical industry. In addition to named projects mentioned above, the Company entered into three additional funded feasibility and expression research projects with top-tier human pharmaceutical companies to validate the C1 technology to produce high levels of mAbs and other therapeutic proteins. Together with other internally funded research programs, we were able to use C1 to express a variety of types of therapeutic proteins, including monoclonal antibodies (mAbs), Bi-Specific antibodies, Fab antibody fragments, and Fc-Fusion proteins using our C1 technology. So far, we were able to demonstrate C1's ability to express various protein at the following level:

- an Fc-Fusion protein at 13.2 grams per liter (g/l) in 168 hours, or 1.89 grams per liter per day (g/l/d)
- a mAb protein at 24.5 g/l in 168 hours, or 3.5 g/l/day
- a Fab antibody fragment at 14.5 g/l/d in 164 hours, or 2.1 g/l/day
- a Bispecific protein at 1.04 g/l in 144 hours, or 0.17 g/l/day
- A SBV antigen at a level of 1.8 g/l in 5 days, or 350 mg/l/day
- Most of the diverse proteins expressed by C1 as required by third parties that reached higher productivity levels than their target goals, including certain "difficult to express proteins"

The Company believes that such results are promising and show greater productivity potential of C1 compared to the average expression yields of CHO cells which is the predominant production system currently used to manufacture glycosylated biopharmaceutical drugs. However, in order to potentially commercialize or capitalize on C1's potential in producing glycoproteins, we will need to complete the glycoengineering of C1, maintain the productivity advantages shown in the non-glycoengineered C1 strains and be able to demonstrate a variety of biological and analytical data related to quality, performance, stability and safety.

(8) Metabolites and Other Market Opportunities

The Company also successfully applied metabolic modeling, synthetic biology and genome engineering techniques to demonstrate the potential benefits of using C1 as a primary metabolite-producing host organism. We believe that the knowledge and data generated in this program is expected to enhance our understanding of C1's metabolic characteristics and help us in advancing our ongoing programs, as we continue to explore the development and commercialization of one or more primary and/or secondary metabolites.

Additionally, in early 2018, we began to conduct certain funded research activities to further understand if, or how the C1 technology may be applied for use in developing and manufacturing certain metabolites. The initial data from this metabolite project, where the Phase I data milestone was achieved, demonstrated that C1 has the potential to be engineered to produce certain metabolites. The Company is evaluating if, and how it may further develop and commercialize this potential metabolite product which may include the Company fully funding this on its own, or in collaboration with third parties.

The Company is evaluating the potential go-to-market strategies for both the primary and secondary metabolites and may decide to continue internally funding such project to product commercialization or may in the future seek third-party funding in one or more collaborations, licensing or form other types of alternative structure(s), to further develop and monetize this potential opportunity.

The Company believes that certain attributes of C1, together with our continuing platform research and development programs, provides us with the potential to create attractive research, licensing, partnering/collaboration and other revenue and funding opportunities in the animal and human biopharmaceutical industries. The third-party funded research projects mentioned above and others that we are seeking may help defray some of our research expenses, as we continue to develop and demonstrate the potential of our C1 technology. The Company will continue seeking research collaboration opportunities and partners to potentially commercialize C1-based products.

Employees

As of December 31, 2019, we had 6 employees located in the United States, and 3 key consultants located in Europe. None of our employees are represented by a labor union, and we consider our employee relations to be good.

Corporate information

Founded in 1979 by Mark A. Emalfarb, our Chief Executive Officer, Dyadic has focused on the development of C1 expression platform since 1992, refining and optimizing the C1 technology to become an industry leading gene expression and protein production system.

Currently, Dyadic is a global biotechnology company with operations in the United States and a satellite office in the Netherlands and currently two research organizations performing services under contract to Dyadic in Finland and Spain. Dyadic was incorporated in Delaware in September 2002. Our principal corporate offices are located at 140 Intracoastal Pointe Drive, Suite 404, Jupiter, FL 33477; telephone number (561) 743-8333; website www.dyadic.com.

Dyadic is required to file annual, quarterly and current reports, proxy statements and other information with the U.S. Securities and Exchange Commission ("SEC"). Investors may read and copy any document that Dyadic files, including this Annual Report on Form 10-K, at the SEC's Public Reference Room at 100 F Street, N.E., Room 1580, Washington, DC 20549. Investors may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. In addition, the SEC maintains an Internet site at www.sec.gov that contains reports, proxy and information statements and other information regarding issuers that file electronically with the SEC, from which investors can electronically access Dyadic's SEC filings.

We maintain a website at www.dyadic.com. From time to time, the Company may use its website as a channel of distribution of material Company information, and financial and other material information regarding the Company is routinely posted on and accessible at http://dyadic.com/investors. We make available free of charge on or through our website our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, reports filed pursuant to Section 16 and any amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), as soon as reasonably practicable after we electronically file or furnish such materials to the SEC. In addition, we have posted the charters for our Audit Committee, Compensation Committee, and Nominating and Governance Committee, as well as our Board Governance Principles and Code of Conduct, on our website under the heading "Investors", and sub-heading "Corporate Governance."

Item 1A. Risk Factors

Investing in our common stock involves a high degree of risk. You should carefully consider the following material risks, together with the other matters described in this Annual Report and in our financial statements and the related notes thereto in evaluating our current business and future performance. We cannot assure you that any of the events discussed in the risk factors below will not occur. If we are not able to successfully address any of the following risks or difficulties, we could experience significant changes in our business, operations and financial performance. In such circumstances, the trading price of our common stock could decline, and in some cases, such declines could be significant, and you could lose part or all of your investment. In addition to the risks described below, other unforeseeable risks and uncertainties or factors that we currently believe are immaterial may also adversely affect our operating results, and there may be other risks that may arise in the future. Certain statements contained in this Annual Report (including certain statements used in the discussion of our risk factors) constitute forward-looking statements. Please refer to the section entitled "Cautionary Note Regarding Forward-Looking Statements" appearing on page 4 of this Annual Report important limitations and guidelines regarding reliance on forward-looking statements.

Risks Related to Our Business and Industry

We may not succeed in implementing our business strategy.

In connection with the December 31, 2015 sale of substantially all of the assets of our industrial technology business to DuPont's Industrial Biosciences business for $75 million in cash (the "DuPont Transaction"), DuPont obtained certain rights to utilize the C1 technology for development and production of pharmaceutical products, for which it will make royalty payments to Dyadic upon commercialization. At the same time, Dyadic retained the co-exclusive rights to the C1 technology for use in all human and animal pharmaceutical applications, with Dyadic currently having exclusive ability to enter into sub-license agreements in that field (subject to the terms of the license and certain exceptions). We cannot predict whether DuPont intends to or will pursue the use of the C1 technology to develop or manufacture pharmaceutical products or whether or when we might receive royalties from DuPont. In certain circumstances, Dyadic may owe a royalty to either DuPont or certain licensors of DuPont, depending upon whether Dyadic elects to utilize certain patents owned or licensed in by DuPont. Consequently, our business has changed dramatically as compared to the past as we no longer have any product revenue related to our enzyme business. We have begun to apply the C1 technology in the biopharmaceutical market, which has higher risks and a higher barrier to entry.

As we attempt to adapt the C1 technology for use in the biopharmaceutical market, our business is subject to the execution, integration, and research and development risks that early-stage companies customarily face with new technologies, products and markets. These risks relate to, among other things, our ability to successfully further develop the C1 technology, products and processes, assemble and maintain adequate production and research and development ("R&D") capabilities, comply with regulatory requirements, construct effective channels of distribution and manage growth. We have encountered and will continue to encounter risks and difficulties frequently experienced by early stage companies in expanding and upgrading our intellectual property, regulatory, marketing, sales and R&D capabilities, improving our accounting and financial reporting and internal controls infrastructure, and adapting to the rapidly evolving industries in which we operate. Additionally, we are subject to competition from much larger companies with more resources than us. Also, the market for developing and manufacturing pharmaceutical proteins produced from a filamentous fungus, such as the C1 fungus, is a market that is not yet established and is subject to a high level of regulatory hurdles from the U.S. Food and Drug Administration (the "FDA") and other governmental bodies and there is a risk that such technologies will not be adopted by the pharmaceutical industry or governmental agencies and therefore not succeed and/or not grow at the rates projected or at all.

We have not yet commercialized any products for the biopharmaceutical market, and we may never be able to do so.

We do not know when or if we and/or our current and/or future collaborators and licensees will complete any of our or their product development efforts, obtain regulatory approval for any product candidates incorporating our technologies or successfully commercialize any approved products. Even if we and/or our licensees and collaborators are successful in developing products that are approved for marketing, we and they will still require that these products gain regulatory approval and market acceptance. The biopharmaceutical industry is a high-risk industry in that even if we are successful at expressing certain proteins, these proteins may fail to be advanced or approved for use or sale for many reasons including their characteristics, biological activity, bio comparability, bio similarity, stability, glycosylation structures, containments, purity, performance, safety and regulatory reasons.

Because of the numerous risks and uncertainties associated with pharmaceutical product development, we are unable to predict the timing or amount of increased expenses or when, or if, we will be able to achieve certain technology, product and/or commercial milestones, access fees and royalties, launch products and/or processes, or achieve profitability. In addition, our expenses could increase if we are required by the FDA or other domestic and foreign regulatory authorities to perform studies or trials in addition to those currently expected, or if there are delays in completing additional safety studies such as toxicology and pathogenicity studies, clinical trials, preclinical studies, animal or human studies or the development of any of our or our collaborators' product candidates.

As a result of the evolving nature of our business, our operating history in past periods will not provide a reliable basis to evaluate our current business or predict our future performance. Any assessments of our current business or predictions regarding our future success or viability are likely not as accurate as they could be if we had a longer operating history in our new line of business.

We have a history of net losses, and we may not achieve or maintain profitability.

As of December 31, 2019, we have an accumulated deficit of approximately $41.4 million. Prior to the DuPont Transaction, our revenues were derived from licensing, licensing milestones and a very small amount of royalties from the

licensing of the C1 expression system to third parties mainly within the industrial biotechnology markets, the operation of our industrial enzyme business and the collection of R&D fees from third parties. Our profitability has strongly relied on, and will be even more reliant going forward on, third party industry and government research funding, licensing partnerships and other forms of collaborations. We believe that it is likely that if we do not sign license agreements or other forms of collaborations, we will incur losses because of our planned levels of R&D and additional general and administrative expenditures that we believe is necessary to operate our business and further develop the C1 technology for use in the pharmaceutical business. The amount of our future net losses will depend, in part, on the rate of increase in our expenses along with other potential cost of unforeseen circumstances, our ability to generate research funding, government grants, receipt of access fees, milestones, royalty and other payments, and whether we are able to generate revenues by entering into license agreements or other forms of collaborations, launch new products and/or processes from future licensees or collaborators, and our ability to raise additional capital. The net losses we anticipate incurring over the next several years will have an adverse effect on our stockholders' equity and working capital.

The R&D efforts needed to enhance and leverage the C1 technology for use in developing and manufacturing human and animal biopharmaceuticals, metabolites and viral vectors such as AAV, will require significant funding and increased staffing; therefore, we expect near-term operating and research expenses to continue, and maybe even accelerate, as we further develop our research and business plans, and our goals and objectives. Consequently, we will require significant additional revenue to achieve profitability. We cannot provide assurance that we will be able to generate any revenues from our focus and efforts as we intend to apply the C1 technology into the biopharmaceutical industry. If we fail to enter into new license agreements or other forms of collaborations or generate revenues and profit from additional research projects and government grants, the market price of our common stock will likely decrease. Further regulatory complications, competition from other technologies, or delays in our research programs and the adoption and use of the C1 technology by the biopharmaceutical industry may force us to reduce our staffing and research and development efforts, which may further affect our ability to generate cash flow.

We are dependent on collaborations with third parties and if we fail to maintain or successfully manage existing, or enter into new, strategic collaborations, we may not be able to develop and commercialize many of our technologies and products and achieve profitability. We have a small number of research collaborations, and the nonperformance or loss of any collaboration could have a material adverse effect on our business.

Our R&D revenue is generated from a small number of research collaborations. These collaborations could be delayed or be discontinued, as they have in the past, at any time with little advance notice. If these research collaborations are lost or do not perform as expected, it could have a material adverse effect on our business, financial condition and operating results.

Our ability to enter into, maintain and manage collaborations in our target markets is fundamental to the success of our business. We currently rely on, and expect to continue to rely on, our current and future partners, in part, for research and development, manufacturing and distribution, sales and marketing services, and application and regulatory know how. In addition, we intend to enter into additional collaborations to conduct research, develop, produce, market, license and sell our technologies and products and processes we anticipate developing. However, we may not be successful in entering into collaborative arrangements with third parties. Any failure to enter into such arrangements on favorable terms could delay or hinder our ability to develop and commercialize our technologies, products and processes and could increase our costs of research and development and commercialization.

We have limited or no control over the resources that any collaborator or licensee may devote to our programs.

Any of our current or future collaborators or licensees may, breach or terminate their agreements with us or otherwise fail to perform and conduct their required activities successfully and in a timely manner. Our collaborators or licensees may elect not to develop products arising out of our collaborative or license arrangements or may choose not to devote sufficient resources to the development, manufacture, market or sale of these products. If any of these events occur, we or our collaborators or licensees may not develop our technologies or commercialize our or their products.

Reductions in collaborators' R&D budgets may affect our businesses.

Fluctuations in the R&D budgets of government agencies, our customers, licensees, collaborators and research partners could have a significant impact on the interest in and demand for our technology. Private R&D budgets fluctuate due to changes in available resources, consolidation in the pharmaceutical and other industries, spending priorities and institutional budgetary policies. Governmental agencies, which we periodically receive research funding from, also experience fluctuations in their R&D budgets, which may negatively impact our ability to receive funding from such agencies. Our businesses could be

seriously damaged by significant decreases in life sciences and/or pharmaceutical R&D expenditures by government agencies and existing and potential partners.

We heavily rely on contracts with third-party contract research organizations ("CROs") to conduct our research and development, which may not be available to the Company on commercially reasonable terms or at all.

As a result of the DuPont Transaction, we no longer own a research and development laboratory and we became dependent upon the performance and research capacity of a number of third-party contract research organizations to conduct our research and development projects, which include services and programs in connection with the modification and enhancement of the Company's C1 expression platform and to support our business development efforts for C1's use in biopharmaceutical applications. The licensing and service arrangements with these third party CROs are not guaranteed to be renewed or continued on reasonable terms, if at all. The Company may be unable to maintain or expand its access to third party CROs to conduct our research projects. Failure to maintain and expand access to certain third party CROs could have a material adverse impact on the Company's research projects, financial condition and operating results.

We are heavily dependent upon the availability and performance of third-party research organizations. If we require research capacity and/or capabilities and are unable to obtain it in sufficient quantity, and quality or at terms and conditions that are acceptable to the Company or our third party collaborators we may not be able to offer our technologies or products for license, or sale, or we may be required to make substantial capital investments to build out that capacity or to contract with other research organizations on terms that may be less favorable than our current arrangements. In addition, if we contract with other research organizations, we may experience delays of several months in qualifying them or in starting up research programs at these facilities, which could harm our relationships with our licensees, collaborators or customers and we may be required to make a capital investment in connection with these arrangements. This could have a material adverse effect on our business, revenues or operating results.

Additionally, if we were unsuccessful in retaining a CRO with the requisite experience and skills we require and were required to build our own research facility, it could take a year or longer before such owned research facility is able to be brought online to carry out the necessary technology and product development efforts of the Company. Any funding and resources we utilize to acquire or build internal research capabilities could be at the expense of other potentially more profitable opportunities.

Conflicts with the CROs, collaborators and/or licensees could harm our business.

An important part of our strategy includes involvement in proprietary research programs. We may pursue opportunities in the pharmaceutical field that could conflict with those of our collaborators and licensees. Moreover, disagreements with DuPont, our current and/or future CROs, collaborators or licensees could develop over rights to our intellectual property, over further licensing of our technologies to other parties in certain pharmaceutical fields, or over other reasons. Any conflict with DuPont, our current and/or future CROs, collaborators or licensees could reduce our ability to obtain future collaboration agreements and negatively impact our relationship with existing collaborators or licensees, which could reduce our revenues and profits.

Some of our current and/or future CROs, collaborators and/or licensees could also become competitors in the future. Our current and/or future CROs, collaborators and/or licensees could develop competing technologies or products, preclude us from entering into collaborations or license agreements with their customers, could fail to obtain timely regulatory approvals, terminate their agreements with us prematurely or fail to devote sufficient resources to the development and commercialization of their technology and products and processes. Any of these developments could harm our technology development and value, product development efforts, revenue, profits and overall business.

If issues arise with our current and/or future CROs, collaborators and/or licensees, we will need to either commercialize products resulting from our proprietary programs directly or by licensing to other companies, which could cause us to lose revenue or incur losses. Similarly, we may lose revenue or incur losses if we are unable to license our technology to new licensees on commercially reasonable terms or are unable to develop the capability to market and sell products and processes on our own.

We rely on our collaborators and other third parties to deliver timely and accurate information in order to accurately report our financial results as required by law.

We need to receive timely, accurate and complete information from a number of third parties in order to accurately and timely report our financial results. We rely on third parties to provide us with complete and accurate information regarding

research developments and data, revenues, expenses and payments owed to or by us on a timely basis. We will need to establish the proper controls related to obtaining and reporting information from our CROs, licensees and collaborators related to research results and other data, when milestones are earned, if any, when royalties are earned, if any, as well as other types of potential revenues and expenses. If the information that we receive is not accurate, our consolidated financial statements may be materially incorrect and may require restatement. Although we may have contractual rights to receive information, such provisions may not ensure that we receive information that is accurate or timely. As a result, we may have difficulty in completing accurate and timely financial disclosures, which could have a material adverse effect on our business, financial condition and results of operations and the market price of our common stock.

If our competitors develop technologies and products more quickly and market more effectively than our product candidates, our commercial opportunity will be reduced or eliminated. Because of the competition and safety risks in the biopharmaceutical industry, any product candidates are subject to extensive regulation, which are costly and time consuming.

Any biopharmaceutical products we or our current or collaborators or licensees develop through the C1 expression system will compete in highly competitive and regulated markets. Many of the organizations competing with us in the market for such products have more capital resources, larger R&D and marketing staff, facilities and capabilities, and greater experience in research and development, regulatory approval, manufacturing and commercialization of technology and products. Accordingly, our competitors may be able to develop technologies and products more rapidly. If a competitor develops superior technology or products, or more cost-effective alternatives to our and our collaborators' or licensees' technologies, products or processes, it could have a material adverse effect on our business, financial condition and results of operations.

Customers may prefer existing or future technologies over the C1 expression system. Well-known and highly competitive biotechnology companies offer comparable or alternative technologies for the same products and services as our biopharmaceutical business. We anticipate that we, and our current or future collaborators and licensees will continue to encounter increased competition as new companies enter these markets and as the development of biological processes and products evolve.

Pharmaceutical companies are usually more focused on the qualitative and safety aspects of the products rather than on the actual cost or potential cost savings of producing such safe pharmaceutical products. It is expected to be a very difficult task, and it is expected to take a very long time to get the biopharmaceutical industry to adopt a new expression system, including the C1 expression system. Even if the C1 technology delivers on its promise of expressing high volumes of low-cost proteins with the proper qualitative properties without negative side effects, it is still expected to take a very long time, if ever, to obtain adoption and use of the C1 expression system by both the pharmaceutical industry and governmental regulatory agencies.

We could fail to manage our growth, which would impair our business.

We will need to take the following steps, among others, to manage our growth. If we fail to achieve one or more of these, it could have a material adverse effect on our business, financial condition and results of operations.

- Balance our cash burn with technology and product development, advancement and value creation of such technologies and products;
- Maintain and gain additional CROs, or other technology collaborators;
- Maintain and gain additional collaborators, strategic partners technology licensees or other forms of structures;
- File, maintain and defend our intellectual property and protect our proprietary information and trade secrets;
- Develop technology, products and processes that do not infringe on the intellectual property of third parties;
- Recruit, hire and maintain the required employees necessary to maintain and grow our business and to advance our technologies and products;
- Achieve technical and commercial success in our and our licensees' or collaborators' research and product development programs;
- Implement and oversee our operational and financial control systems;
- Operate successful recruiting and training programs;
- Access the required manufacturing capacity;
- Access additional growth capital;

- Recruit and maintain consultants, board members and scientific advisory board members;
- Manage scientific risks and uncertainties that may arise during our R&D and regulatory programs; and
- Limit litigation risks and uncertainties.

Our revenue growth depends in part on market and regulatory acceptance of the C1 technology to develop and manufacture animal and/or human biopharmaceutical products.

The success of our biopharmaceutical business will depend on our ability to develop, register, and introduce similar, new and improved technologies and products in a timely manner, at significantly lower manufacturing costs that address the evolving requirements of the pharmaceutical industry and potential customers. There is no assurance that the C1 technology or any product expressed from C1 will perform the same or better, save our customers money relative to existing gene expression technologies or those of our competitors, provide our customers with other benefits, obtain governmental safety and regulatory approvals, be registered or will gain market acceptance. If we fail to develop similar, new and better performing technologies, products and processes at significantly lower manufacturing costs, make fermentation yield improvements on our existing production processes, generate the necessary safety and regulatory data or gain registration and market acceptance of the C1 technology and C1 expressed products or processes, we could fail to recoup our R&D investment and fail to capitalize on potential opportunities or gain market share from our competitors. Any failure, for technological, quality, safety, regulatory, or other reasons, to develop and launch improved technologies and new products, could negatively impact our business, financial condition and results of operations.

The dynamic and conservative nature of the biopharmaceutical industry, the unpredictable nature of the product development process and the time and cost of new technology adoption in the biopharmaceutical industry may affect our ability to meet the requirements of the marketplace or achieve market and/or regulatory acceptance. Some factors affecting market and regulatory acceptance of our technologies and products include:

- Availability, quality, performance and price of competitive products and processes;
- Functionality and cost of similar, new and existing technologies and products;
- Timing of product introduction, performance and pricing compared to our competitors;
- Scientists', customers' and regulatory agencies' opinions of our technology and products' utility and our ability to effectively incorporate their feedback into future technology development or product offerings;
- The status of C1 and other expression technologies including CHO, *E.coli*, other microbial, insect, algae, plant and other expression systems as to safety, quality, purity and expression levels, capital expenditure intensity, operating costs, and continually changing governmental and industry regulatory requirements;
- The impact of our own, DuPont's and our collaborators' intellectual property, and that of our competitors
- Competition with and against much larger companies; and
- Regulatory hurdles, timing, costs and receipt of approvals.

The expenses or losses associated with unsuccessful technology and product development activities or lack of market acceptance of our new technologies and products could seriously harm our business, financial condition and results of operations.

We must continually offer new products and technologies.

The biopharmaceutical industry is characterized by rapid technological change, and the area of gene and protein research and platform development is a rapidly-evolving field. Our future success will depend on our ability to maintain a competitive position with respect to technological advances in terms of product and process quality, stability, safety, productivity and cost. Rapid technological development by others could cause our products and technologies to become obsolete and it could have a material adverse effect on our business, financial condition and results of operations.

Potential future regulations limiting our ability to sell genetically engineered products could harm our business.

We, our current and future collaborators and licensees expect to develop biologic products using genetically engineered microorganisms (GMOs). Products derived from GMOs may in some instances be subject to bans or additional regulation by federal, state, local and foreign government agencies. These agencies may not allow us or our collaborators and licensees to produce and market products derived from GMOs in a timely manner or under technically or commercially feasible conditions.

Compliance with FDA, Environmental Protection Agency (EPA) and EU regulations could result in expenses, delays or other impediments to our product development programs or the commercialization of resulting products. The FDA currently applies the same regulatory standards to products made through genetic engineering as those applied to products developed through traditional methodologies. Regardless of GMO status, a product may be subject to lengthy FDA reviews and unfavorable FDA determinations due to safety concerns or changes in the FDA's regulatory policy. The EPA regulates biologically-derived enzyme-related chemical substances not within the FDA's jurisdiction. An unfavorable EPA ruling could delay commercialization or require modification of the production process or product in question, resulting in higher manufacturing costs, thereby making the product uneconomical. The EU and other countries also have regulations regarding the development, production and marketing of products from GMOs, which may be as or more restrictive than U.S. regulations.

Further, we, DuPont, our current and future collaborators and licensees are subject to regulations in the other countries in which we operate outside of the U.S. and EU, which may have different rules and regulations depending on the jurisdiction. Different countries have different rules regarding which products qualify as GMO. If any of these countries expand the definition of GMO and increase the regulatory burden on GMO products, our business could be harmed.

Other changes in regulatory requirements, laws and policies, or evolving interpretations of existing regulatory requirements, laws and policies, may result in increased compliance costs, delays, capital expenditures and other financial obligations that could adversely affect our business or financial results.

Public views on ethical and social issues may limit use of our technologies.

Our success will depend in part upon our ability, our current and future collaborators' or licensees' ability, to develop pharmaceutical products discovered, developed and manufactured through the C1 expression system. Governmental authorities could, for social, ethical or other purposes, limit the use of genetic processes or prohibit the practice of using a modified C1 organism to produce biologic vaccines, drugs and other biologic products. Concerns about the C1 expression system, and particularly about the expression of genes from C1 for pharmaceutical purposes, could adversely affect their market acceptance.

The commercial success of our current and future collaborations and our licensees' potential products will depend in part on public acceptance of the use of genetically engineered products including enzymes, vaccines, drugs and other protein products produced in this manner. Claims that genetically engineered products are unsafe for consumption or pose a danger to the environment, animals or humans may influence public attitudes. Our and our licensees' genetically engineered products may not gain public acceptance. Negative public reaction to GMOs and products could result in increased government regulation of genetic research and resulting products, including stricter labeling laws or other regulations, and could cause a decrease in the demand for our products. If we and/or our collaborators are not able to overcome the ethical, legal, and social concerns relating to genetic engineering, some or all of our products and processes may not gain public acceptance. Any of the considerations below could result in expenses, delays, or other impediments to our and our licensees' programs or the public acceptance and commercialization of products and processes dependent on our technologies and could have a material adverse effect on our business, financial condition and results of operations:

- public attitudes about the safety and environmental hazards of, and ethical concerns over, genetic research and genetically engineered products and processes, which could influence public acceptance of our and our licensees' technologies, products and processes;
- public attitudes regarding, and potential changes to laws governing, ownership of genetic material which could harm our intellectual property rights with respect to our genetic material and discourage collaborative partners or licensees from supporting, developing, or commercializing our products, processes and technologies; and
- government regulations are changing rapidly, which likely will result in greater government regulation of genetic research and derivative technologies and products derived from such technologies, making approvals of such technologies and the products derived from such technologies to be delayed, more expensive with added risks.

Our results of operations may be adversely affected by environmental, health and safety laws, regulations and liabilities.

We and the CROs, collaborators and licensees are subject to various federal, state and local environmental laws and regulations relating to the discharge of materials into the air, water and ground, the generation, storage, handling, use, transportation and disposal of hazardous materials, and the health and safety of our employees. These laws, regulations and permits can often require expensive pollution control equipment or operational changes to limit actual or potential impacts to the environment. A violation of these laws and regulations or permit conditions can result in substantial fines, criminal sanctions, permit revocations and/or facility shutdowns.

In addition, new laws, new interpretations of existing laws, increased government enforcement of environmental laws, or other developments could require us or our contract research organizations to make additional significant expenditures. Present and future environmental laws and regulations and interpretations thereof, more vigorous enforcement of policies and discovery of currently unknown conditions may require substantial expenditures that could have a material adverse effect on our results of operations and financial position. Additionally, any such developments may have a negative impact on our contract manufacturers, which could harm our business.

We may fail to commercialize the C1 expression system for the expression of therapeutic proteins, antibodies, vaccines, metabolites of other biologic products.

We have not yet developed any C1-based biopharmaceutical products, conducted the necessary safety, efficacy, cost and regulatory studies, or completed the commercialization of any therapeutic proteins, antibodies and vaccines.

To date, drug companies have developed and commercialized only a small number of gene-based products in comparison to the total number of drug molecules available in the marketplace. Our biopharmaceutical business should be evaluated as having the same risks as those inherent to early-stage biotechnology companies because the application of the C1 expression system for the expression of pre-clinical and clinical quantities of therapeutic proteins, antibodies and vaccines is still in early development.

Successful development of the C1 expression system for biopharmaceutical purposes will require significant research, development and capital investment, including testing, to prove its safety, efficacy and cost-effectiveness. In general, our experience has been that each step in the process has been longer and costlier than originally projected, and we anticipate that this is likely to remain the case with respect to the continuing development efforts of our biopharmaceutical business.

We have no experience submitting applications to the FDA or similar regulatory authorities and could be subject to lengthy and/or unfavorable regulatory proceedings.

While we understand that many of our current and future collaborators or licensees may have a proven track record of experience submitting application to the FDA or other applicable regulatory authorities, we have no such experience. Neither we nor any collaborator or licensee has yet submitted any application with the FDA or any other regulatory authority for any product candidate generated through the use of the C1 expression system as it relates to the development and manufacture of pharmaceutical products. The FDA may not have substantial experience with technology similar to ours, which could result in delays or regulatory action against us. We and our current and future collaborators and licensees may not be able to able to obtain regulatory approval for C1 expressed products, which would harm our business.

The C1 expression system has been tested for use in the manufacturing of an enzyme in the production of wine, beer and fruit juices, and has generated promising safety and toxicity data for that enzyme. The C1 expression system could produce vaccines, antibodies, or therapeutic products and enzymes that have safety, toxicity, pathogenicity, immunogenicity and other issues associated with them. The C1 expression system may be subject to lengthy regulatory reviews and unfavorable regulatory determinations if it raises safety questions which cannot be satisfactorily answered or if results from studies do not meet regulatory requirements. An unfavorable regulatory ruling could be difficult to resolve and could delay or possibly prevent a product from being commercialized, or even the use of the C1 technology to produce future products which would have a material adverse effect on our growth and prospects. Additionally, future products produced by us or our current and future collaborators or licensees using the C1 expression system may not be approved by the FDA or other regulatory agencies in the U.S. or worldwide. There is no assurance that safety, toxicity, pathogenicity, immunogenicity and other issues will not arise in current or future product development and manufacturing programs due to media, fermentation, inherent properties or genetic changes in the C1 strain and fermentation process.

If these therapeutic protein products, antibodies or vaccines are not approved by regulators, we or our current and future customers or collaborators and licensees will not be able to commercialize them, and we may not receive research funding, upfront license fees, milestone and royalty payments which are based upon the successful advancement of these products through the drug development and approval process. Even after investing significant time and expense, any regulatory approval may also impose limitations on the uses for which we can market a product, and any marketed product and its manufacturer are subject to continual review. Discovery of previously unknown problems with a product or manufacturer may result in new restrictions on the product, manufacturer and manufacturing facility, including withdrawal of the product from the market. In certain countries, regulatory agencies also set or approve prices, which may result in low or unprofitable margins and would have a material adverse effect on our business, financial condition and results of operations.

Alternative technologies may not require microbial or other cell produced proteins.

Research is being conducted with cell or gene based therapies and other technologies that offer a possible alternative to producing proteins as they are today based on microbial, organic matter containing Carbon, Hydrogen, and Oxygen or other organisms, that may allow genes to be directly inserted into cells that can be implanted into animals and humans directly, displacing the need for the existing methods used for development of biologic vaccines and drugs. If they are successful, these new methods may supplant or greatly reduce the need for microorganisms, Carbon, Hydrogen, and Oxygen or other organisms to produce these proteins externally as the injected cells in animals and human may be able to do so internally.

Other Business Risks That We Face

We may need substantial additional capital in the future to fund our business.

Our future capital requirements may be substantial, particularly as we continue to further develop, engineer and optimize the C1 expression system and our other proprietary technologies, products and processes for licensing for research and development, and commercialization of potential animal and human pharmaceutical products.

Our need for additional capital, if any, will depend on many factors, including (i) the technical and financial success of our efforts to enter the biopharmaceutical industry, (ii) the progress and scope of our collaborative and independent R&D projects and other ongoing and future potential projects, (iii) the receipt of future upfront fees, potential milestones, royalties and other payments from future licensees or other types of collaborations if any, (iv) our ability to obtain payments from other potential pharmaceutical business customers through research funding, milestones, license agreements and other forms of collaborative agreements, (v) the extent to which we can obtain licensees, or other types of collaborative partnerships for the research, development and commercialization of proteins in the biopharmaceutical industry, (vi) the effect of any acquisitions of other technologies and/or businesses that we may make in the future, and (vii) the filing, prosecution, enforcement and defense of patent claims and/or infringements by us, and our collaborators.

We currently have very little leverage and if our capital resources are insufficient to meet our capital requirements, we will have to raise additional funds to continue the development of our technologies and complete the development and commercialization of products, if any, resulting from our technologies. If the acquisition of additional funds is not possible or if we engage in future equity financings, dilution to our existing stockholders may result. If we raise capital through debt financing, we may be subject to restrictive covenants that limit our ability to conduct our business. We may not be able to raise funds on terms that are favorable to us, if at all. If we fail to raise sufficient funds and incur losses, our ability to fund our operations, take advantage of strategic opportunities, develop products or technologies, or otherwise respond to competitive pressures could be significantly limited. If this happens, we may be forced to delay or terminate research or development programs or the commercialization of products resulting from our technologies, curtail or cease operations or obtain funds through collaborative and licensing arrangements that may require us to relinquish commercial rights, sell certain assets of the company which will limit future opportunities, or grant licenses on terms that are not favorable to us. Without sufficient funding or revenue, we may have to curtail, cease, or dispose of, one or more of our operations and would have a material adverse effect on our business, financial condition, and future prospects.

Changes in global economic and financial markets may have a negative effect on our business.

Our business is subject to a variety of market forces including, but not limited to, domestic and international economic, political and social conditions. Many of these forces are beyond our control. Any change in market conditions that negatively impacts our operations or the demand of our current or prospective customers could adversely affect our business operations.

Changes in the global financial, pharmaceutical and biotech markets may make it difficult to accurately forecast operating results. These changes have had, and may continue to have, a negative effect on our business, results of operations, financial condition and liquidity. In the event of a downturn in global economic activity, current or potential business partners may go out of business, may be unable to fund purchases or determine to reduce purchases, all of which could lead to reduced demand for our products and increased payment delays or defaults. We are also limited in our ability to reduce costs to offset the results of a prolonged or severe economic downturn given certain fixed costs associated with our operations and difficulties if we over strained our resources. The timing and nature of a sustained recovery in the credit and financial markets remains uncertain, and there can be no assurance that market conditions will significantly improve in the near future or that our results will not continue to be materially and adversely affected.

We face risks related to health epidemics, pandemics and other widespread outbreaks of contagious disease, pandemics, epidemics or other biological threats, such as COVID-19, that could significantly disrupt our operations and have a material

adverse effect on our business, our employees, directors, consultants, collaborators and other third parties, including business development activities and research and development projects conducted by third party contract research organizations parties.

Significant outbreaks of contagious diseases, and other adverse public health developments, could have a material impact on our business operations and operating results. The recent outbreak of COVID-19 originating in Wuhan, China, in December 2019 has spread to multiple countries, causing the World Health Organization to declare this outbreak a "Public Health Emergency of International Concern" in January 2020, and the U.S. Department of Health and Human Services to declare a public health emergency to aid the U.S. healthcare community in responding to COVID-19. This virus continues to spread globally and, as of March 23, 2020, has spread to over 160 countries, including the United States and Europe, where several of our key executive management members and our third-party contract research organizations are located. The continued spread of COVID-19 globally could adversely affect our business operations in the United States and elsewhere, including our ability to carry on business development activities, and restrictions in business-related travel, among others.

The spread of COVID-19, or another infectious disease, pandemic, epidemic or other biological threat could result in delays or disruptions in our on-going research projects. We rely on third parties in the United States and Europe to conduct our research and development projects and to provide other services, and COVID-19 may affect service providers of such third-party contract research organizations and therefore negatively affect the operations of our on-going research projects. We may take temporary precautionary measures intended to help minimize the risk of infection from the virus for our employees, including temporarily requiring all employees to work remotely, suspending all non-essential travel worldwide and discouraging attendance at industry events, industry and other conferences, and in-person work-related meetings, which could negatively affect our business. Any interruption of business development activities, on-going research and development projects, or shutdowns or other business disruptions for us or any of the third parties with whom we engage, could materially and negatively affected business, financial condition, and results of operations.

Any significant infectious disease outbreak, including the COVID-19 pandemic, could result in a widespread health crisis that could adversely affect the economies and financial markets worldwide, resulting in an economic downturn that could impact our business, financial condition and results of operations. The extent to which COVID-19 could impact our business and research and development activities will depend on future developments, which are highly uncertain and cannot be predicted with confidence, and will depend on many factors, including the ultimate geographic spread of the disease, the duration of the outbreak, the effect of travel restrictions and social distancing efforts in the United States and other countries, the scope and length of business closures or business disruptions, and the actions taken by governments to contain and treat the disease.the pandemic. As such, we cannot presently predict the scope and extent of any potential business shutdowns or disruptions.

If we lose key personnel, including key management or board members, or are unable to attract and retain additional personnel, it could delay our technology and product development programs, harm our R&D efforts, and we may be unable to pursue research funding, licenses and other forms of collaborations or develop our own products.

Our planned activities will require retention and ongoing recruiting of additional expertise in specific areas applicable to our industries, technologies and products being developed. These activities will not only require the development of additional expertise by existing management personnel, but also the addition of new research and scientific, regulatory, licensing, sales, marketing, management, accounting and finance and other personnel. The inability to acquire or develop this expertise or the loss of principal members of our management, broad of directors, consultants, accounting and finance, sales, and scientific staff could impair the growth, if any, of our business. Competition for experienced personnel from numerous companies, academic institutions and other research facilities may limit our ability to attract and retain qualified management, directors, consultants, and scientific personnel on acceptable terms. Failure to attract and retain qualified personnel would inhibit our ability to maintain and pursue collaborations and develop our products and core technologies.

Personnel changes may disrupt our operations. Hiring and training new personnel will entail costs and may divert our resources and attention from revenue-generating efforts. In addition, we periodically engage consultants to assist us in our business and operations, these consultants operate as independent contractors, and we, therefore, do not have as much control over their activities as we do over the activities of our employees. Our directors and consultants may be affiliated with or employed by other parties, and some may have consulting or other advisory arrangements with other entities that may conflict or compete with their obligations to us.

Inability to protect our intellectual property could harm our ability to compete.

Our success will depend in part on our ability to obtain patents and on our and DuPont's (as part of the DuPont Transaction, patents were assigned to DuPont) and our current and future collaborators' and licensees' ability to maintain adequate protection of our and their intellectual property. If we, DuPont, or our current and future collaborators and licensees do not adequately protect our intellectual property, competitors may be able to practice our technologies and erode our competitive advantage. The laws of some foreign countries do not protect proprietary rights to the same extent as the laws of the United States, and many companies have encountered significant problems in protecting their proprietary rights in these foreign countries.

However, the patent positions of biotechnology companies, including our patent position, are generally uncertain and involve complex legal and factual questions. We will be able to protect our proprietary rights from unauthorized use by third parties only to the extent that our, and in certain instances the C1 patents assigned to DuPont, and our current and future collaborators and licensees proprietary technologies are covered by valid and enforceable patents or are effectively maintained as trade secrets. We intend, from time to time, to apply for patents covering both our technologies and our products, while at other times, we only maintain such knowledge as trade secrets without applying for patents, as we deem appropriate. However, existing and future patent applications may be challenged and are not guaranteed to result in the issuing of patents. Even if a patent is obtained, it may not be sufficiently broad to prevent others from practicing our technologies or from developing competing products. Others, including DuPont and our current and future collaborators and licensees, may independently develop similar or alternative technologies or design around our, DuPont's or our current and future collaborators' and licensees' patented technologies. In addition, DuPont, our current and future collaborators, licenses, or other third parties may challenge or invalidate our patents, or our patents may fail to provide us with any competitive advantages. If any third party is able to gain intellectual property protections for technology similar to our own, they may be successful in blocking us and our licensees from using C1 technology and/or commercializing products derived from the C1 technology.

We cannot ensure that any of our pending patent applications will result in issued patents, or even if issued, predict the breadth of the claims upheld in our and other companies' patents. Given that the degree of future protection for our proprietary rights is uncertain, we cannot ensure that we were the first to invent the inventions covered by our pending patent applications, or that we were the first to file patent applications for these inventions or the patents we have obtained.

In addition, Dyadic will continue to review its existing and potential patent positions and rights. Based on our analysis if and when the commercial opportunities and patent enforceability are questionable, we may abandon certain patents in some countries. There is a risk that we will abandon potentially valuable patents.

Litigation or other proceedings or third-party claims of intellectual property infringement could require us to spend significant time and resources and could prevent us and our collaborators from commercializing our or their technologies and products or negatively impact our stock price.

Our commercial success depends in part on neither infringing patents and proprietary rights of third parties, nor breaching any licenses that we have entered into with regard to our technologies and products. Others have filed, and in the future are likely to file, patent applications covering genes or gene fragments, genetic elements, screening, gene expression and fermentation processes and other intellectual property that we may wish to utilize with the C1 expression system or products and systems that are similar to those developed with its use. If these patent applications result in issued patents and we wish to use the claimed technology, we may need to obtain a license from the appropriate third party.

Third parties may assert that we and/or our current and future collaborators and licensees are employing their proprietary technology without authorization. In addition, third parties may obtain patents in the future and claim that use of our technologies infringes these patents. We could incur substantial costs and diversion of management and technical personnel in defending ourselves against any of these claims or enforcing our patents and other intellectual property rights. Parties making claims against us may be able to obtain injunctive or other equitable relief, which could effectively block our ability to further develop, commercialize and sell products, and could result in the award of substantial damages against us. If a claim of infringement against us is successful, we may be required to pay damages and obtain one or more licenses from third parties. In the event that we are unable to obtain these licenses at a reasonable cost, we and/or current and future collaborators and licensees could encounter delays in product commercialization while we attempt to develop alternative methods or products. Defense of any lawsuit or failure to obtain any of these licenses could prevent us from commercializing available products.

In addition, unauthorized parties may attempt to steal, copy or otherwise obtain and use our C1 microbial strains, genetic elements, development and manufacturing processes, other technology or products. Monitoring unauthorized use of our intellectual property is difficult, and we cannot be certain that the steps we have taken will prevent unauthorized use of our

technologies, particularly in certain foreign countries where the local laws may not protect our proprietary rights as fully as in the United States. Moreover, third parties could practice our inventions in territories where we do not have patent protection. Such third parties may then try to import into the United States or other territories products, or information leading to potentially competing products, made using our inventions in countries where we do not have patent protection for those inventions. If competitors are able to use our technologies, our ability and our current and future collaborators' and licensees' ability to compete effectively could be harmed. Moreover, others may independently develop and obtain patents for technologies that are similar to or superior to our technologies. If that happens, we may need to license these technologies, and we may not be able to obtain licenses on reasonable terms, if at all, which could harm our business, financial condition and results of operations.

Confidentiality agreements with employees and others may not adequately prevent disclosures of trade secrets and other proprietary information.

We rely in part on trade secret protection to protect our confidential and proprietary information and processes. However, trade secrets are difficult to protect. We have taken measures to protect our trade secrets and proprietary information, but these measures may not be effective. We require employees and consultants to execute confidentiality agreements upon the commencement of an employment or consulting arrangement with us. These agreements generally require that all confidential information developed by the individual or made known to the individual by us during the course of the individual's relationship with us be kept confidential and not disclosed to third parties. These agreements also generally provide that inventions conceived by the individual in the course of rendering services to us shall be our exclusive property. Nevertheless, our proprietary information may be disclosed, third parties could reverse engineer our biocatalysts and others may independently develop substantially equivalent proprietary information and techniques or otherwise gain access to our trade secrets. Costly and time-consuming litigation could be necessary to enforce and determine the scope of our proprietary rights, and failure to obtain or maintain trade secret protection could adversely affect our competitive business position.

We may be sued for product liability.

We or our current and future collaborators and licenses may be held liable if any product we or they develop, or any product which is made with the use or incorporation of, any of our technologies, causes injury or is found otherwise unsuitable or unsafe during product testing, manufacturing, marketing or sale. These claims could be brought by various parties, including other companies who purchase products from our current and future collaborators and licenses or by end users of the products.

While we maintain product liability insurance, it may not fully cover all of our potential liabilities and our liability could in some cases exceed our total assets, which would have a material adverse effect on our business, results of operations, financial condition and cash flows, or cause us to go out of business. Further, insurance coverage is expensive and may be difficult to obtain and may not be available to us or to our collaborators and licensees in the future on acceptable terms, or at all. Inability to obtain sufficient insurance coverage at an acceptable cost to protect against potential product liability claims could prevent or inhibit the commercialization of products developed by us, or our collaborators and licensees.

Foreign currency fluctuations could adversely affect our results.

In the conduct of our business, in certain instances, we are required to receive payments or pay our obligations in currencies other than U.S. dollars. Especially since a large portion of our research and development is done in the EU and the CROs and certain consultants request payments in Euros. As a result, we are exposed to changes in currency exchange rates with respect to our business transactions denominated in non-US dollars.

Fluctuations in currency exchange rates have in the past and may in the future negatively affect our revenue, expenses and our financial position and results of operations as expressed in U.S. dollars. Our management monitors foreign currency exposures and may in the ordinary course of business enter into foreign currency forward contracts or options contracts related to specific foreign currency transactions or anticipated cash flows. We do not hedge and have no current plans to hedge in the future, the translation of financial statements of consolidated subsidiaries whose local books and records are maintained in foreign currency.

Our ability to use our net operating loss carryforwards ("NOLs") to offset future taxable income may be subject to certain limitations.

In general, under Section 382 of the Internal Revenue Code, a corporation that undergoes an "ownership change" is subject to limitations on its ability to utilize its NOLs, to offset future taxable income. If the Internal Revenue Service challenges our analysis that our existing NOLs are not subject to limitations arising from previous ownership changes, our

ability to utilize NOLs could be limited by Section 382 of the Internal Revenue Code. Future changes in our stock ownership, some of which are outside of our control, could result in an ownership change under Section 382 of the Internal Revenue Code. Furthermore, our ability to utilize NOLs of companies that we may acquire in the future may be subject to limitations.

We may make acquisitions, investments and strategic alliances that may use significant resources, result in disruptions to our business or distractions of our management, may not proceed as planned, and could expose us to unforeseen liabilities.

We may seek to expand our business through the acquisition of, investment in and strategic alliances with companies, technologies, products, and services. If we are able to identify suitable acquisition, investment or strategic alliance targets, we may be unable to negotiate successfully their acquisition at a price or on terms and conditions acceptable to us. Acquisition, investments and strategic alliances involve a number of risks, including, but not limited to:

- the potential adverse effect on our cash position as a result of all or a portion of an acquisition, investment or strategic alliance purchase price being paid in cash;
- the potential issuance of securities that would dilute our stockholders' percentage ownership;
- unanticipated costs and liabilities, including the potential to incur restructuring and other related expenses, including significant transaction costs that may be incurred regardless of whether a potential strategic alliance, acquisition or investment is completed;
- the ability to effectively and quickly assimilate the operations, technologies, products and services or products of the acquired company or business;
- the ability to integrate acquired personnel;
- the ability to oversee, retain and motivate key employees;
- the ability to retain customers;
- minimizing the diversion of management's attention from other business concerns; and
- potential loss of invested capital.

We cannot assure you that, following an acquisition, investment or strategic alliance, we will achieve expected research and development results, anticipated synergies, revenues, specific net income or loss levels that justify such transaction or that the transaction will result in increased earnings, or reduced losses, for the combined company in any future period. Moreover, we may need to raise additional funds through public or private debt or equity financing to acquire any businesses or to provide funding for such business, which would result in dilution for stockholders or the incurrence of indebtedness and may not be available on terms which would otherwise be acceptable to us. We may not be able to oversee such investment(s) nor operate acquired businesses profitably or otherwise implement our growth strategy successfully.

We rely significantly on information technology and any failure, inadequacy, interruption or security lapse of that technology, including any cybersecurity incidents, could harm our ability to operate our business effectively.

Despite the implementation of security measures, our internal computer systems and those of third parties with which we contract are vulnerable to damage from cyber-attacks, computer viruses, unauthorized access, natural disasters, terrorism, war and telecommunication and electrical failures. System failures, accidents or security breaches could cause interruptions in our operations and could result in a material disruption of our research activities and business operations, in addition to possibly requiring substantial expenditures of resources to remedy. To the extent that any disruption or security breach were to result in a loss of, or damage to, our data or applications, or inappropriate disclosure of confidential or proprietary information, we could incur liability and delays in our research efforts and financial reporting compliance, as well as significant increase in costs to recover or reproduce the data.

Risks Related to Our Common Stock

The price of our shares of common stock is likely to be volatile, and you could lose all or part of your investment.

The trading price of our common stock has been, and is likely to continue to be, volatile. Biotechnology company stocks generally tend to experience extreme price fluctuations. The valuations of many biotechnology companies without consistent product sales and earnings are extraordinarily high based on conventional valuation standards such as price-to-earnings and price-to-sales ratios. These trading prices and valuations may not be sustained. Factors that may result in fluctuations in our stock price include, but are not limited to, the following:

- Changes in the public's perception of the prospects of biotechnology companies.

- Broad market and industry factors including market fluctuations or political and economic conditions such as war, recession or changes in interest and currency rates.
- Announcements of new technological innovations, patents or new products or processes by us, DuPont or our current or future collaborators, licensees and competitors;
- Announcements by us, DuPont or our collaborators and licensees relating to our relationships or either of our relationships with other third parties;
- Coverage of, or changes in financial estimates by us or securities analysts;
- Conditions or trends in the biotechnology industry;
- Changes in the market valuations of other biotechnology companies;
- Limitations or expanded uses in the areas within the biopharmaceutical or other industries into which we can apply our technologies and products;
- Actual or anticipated changes in our growth rate relative to our competitors;
- Developments in domestic and international governmental policy or regulations;
- Announcements by us, DuPont, our current and future collaborators and licenses, or our competitors of significant acquisitions, divestures, strategic partnerships, license agreements, joint ventures or capital commitments;
- The position of our cash, cash equivalents and marketable securities;
- Any changes in our debt position;
- Developments in patent or other proprietary rights held by us, DuPont or by others;
- Negative effects related to the stock or business performance of DuPont, our current and future collaborators and licensees, or the abandonment of projects using our technology by our collaborators and/or licensees;
- Scientific risks inherent to emerging technologies such as the C1 expression system;
- Set-backs, and/or failures, and or delays in our or our current and future collaborators' and licensees' R&D and commercialization programs;
- Delays or failure to receive regulatory approvals by us, DuPont and/or our current and future collaborators and licensees;
- Loss or expiration of our or DuPont's intellectual property rights;
- Theft, misappropriation or expiration of owned or licensed proprietary and intellectual property, genetic and biological material owned by us and/or Danisco US, Inc., and VTT Technical Research Centre of Finland Ltd;
- Lawsuits initiated by or against us, DuPont, or our current and future collaborators and licensees;
- Period-to-period fluctuations in our operating results;
- Future royalties from product sales, if any, by DuPont, our current or future strategic partners, collaborators or licensees;
- Future royalties may be owed to DuPont by us, our collaborators, licenses, or sub-licensees under certain circumstances related to our DuPont Pharma License;
- Short positions taken in our common stock;
- Sales of our common stock or other securities in the open market;
- Stock buy-back programs;
- Stock splits; and
- Decisions made by the board related to potential registration of Dyadic's stock under the Securities Act of 1933(as amended (the "Securities Act"), and/or up listing to another stock exchange.

If we were to become party to a securities class action suit, we could incur substantial legal fees and our management's attention and resources could be diverted from operating our business to responding to litigation.

Our quarterly and annual operating results may be volatile.

Our quarterly and annual operating results have fluctuated in the past and are likely to do so in the future. These fluctuations could cause our stock price to vary significantly or decline. Some of the factors that could impact our operating results include:

- Expiration of or cancellations of our research contracts with current and future collaborators and/or licensees, which may not be renewed or replaced;

- Setbacks or failures in our and our current and future collaborators and licensees research, development and commercialization efforts;
- Setbacks, or delays in our research and development efforts to develop and produce biologics.
- Setbacks, or delays in our research and development efforts to re-engineer the C1 technology for its application and use in developing and producing biologics.
- The speed, and success rate of our discovery and research and development efforts leading to potential licenses, or other forms of collaborations, access fees, milestones and royalties;
- The timing and willingness of current and future collaborators and licensees to utilize C1 to develop and commercialize their products which would result in potential upfront fees, milestones and royalties;
- General and industry specific economic conditions, which may affect our current and future collaborators' and licensees' R&D expenditures;
- The adoption and acceptance of the C1 expression system by biopharmaceutical companies and regulatory agencies;
- The addition or loss of one or more of the collaborative partners, grants, research funding, or licensees we are working with to further develop and commercialize our technologies and products in the pharmaceutical industry;
- Our ability to file, maintain and defend our intellectual property and to protect our proprietary information and trade secrets;
- Our ability to develop technology, products and processes that do not infringe on the intellectual property of third parties;
- The improvement and advances made by our competitors to CHO, *E.coli*, yeast, inset cells, plant and other expression systems;
- The introduction by our competitors of new discovery and expression technologies competitive with the C1technology;
- Our ability to enter into new research projects, grants, licenses or other forms of collaborations and generate revenue from such parties;
- Scientific risk associated with emerging technologies such as the C1 expression system;
- Failure to bring on the necessary research, CMO, CDMO and manufacturing capacity if required;
- Uncertainty regarding the timing of research funding, grants or upfront license fees for new C1 expression system collaborations, license agreements or expanded license agreements; and
- Delays or failure to receive upfront fees, milestones and royalties and other payments.

A large portion of our expenses are relatively fixed, including expenses for personnel. Accordingly, if revenues do not grow as anticipated due to the expiration of research contracts or government research grants, the failure to obtain new contracts, licensees or other forms of collaborations or other factors, we may not be able to correspondingly reduce our operating expenses. Failure to achieve anticipated levels of revenue could, therefore, significantly harm our operating results for a particular fiscal period or for even prolonged periods of time.

Due to the possibility of fluctuations in our revenues and expenses, we believe that quarter-to-quarter comparisons of our operating results are not necessarily a good indication of our future performance. Our operating results in some quarters, or even in some years may not meet the expectations of stock market analysts and investors, potentially causing our stock price to possibly decline.

We do not expect to pay cash dividends in the future.

We have never paid cash dividends on our stock and do not anticipate paying any dividends for the foreseeable future. The payment of dividends on our shares, if ever, will depend on our earnings, financial condition and other business and economic factors deemed relevant for consideration by our board of directors. If we do not pay dividends, our stock may be less valuable because a return on investment will only occur if and to the extent that our stock price appreciates.

Our anti-takeover defense provisions may deter potential acquirers and depress our stock price.

Certain provisions of our certificate of incorporation, bylaws and Delaware law, as well as certain agreements we have with our executives, could make it substantially more difficult for a third party to acquire control of us. These provisions include the following:

- We may issue preferred stock with rights senior to those of our common stock;
- We have a classified board of directors;
- Action by written consent by stockholders is not permitted;
- Our board of directors has the exclusive right to fill vacancies and set the number of directors;
- Cumulative voting by our stockholders is not allowed; and
- We require advance notice for nomination of directors by our stockholders and for stockholder proposals.

These provisions may discourage certain types of transactions involving an actual or potential change in control. These provisions may also limit our stockholders' ability to approve transactions that they may deem to be in their best interests and discourage transactions in which our stockholders might otherwise receive a premium for their shares over the current market price.

Our bylaws provide that the Court of Chancery of the State of Delaware (or, if the Court of Chancery does not have jurisdiction, the federal district court for the District of Delaware) will be the sole and exclusive forum for substantially all disputes between us and our stockholders, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or our directors, officers, or employees.

Our bylaws, provide that unless the Company consents in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware (or, if the Court of Chancery does not have jurisdiction, the federal district court for the District of Delaware) shall be the sole and exclusive forum for (A) any derivative action or proceeding brought on behalf of the Company, (B) any action or proceeding asserting a claim of breach of a fiduciary duty owed by any director, officer, employee or agent of the Company to the Company or the Company's stockholders, (C) any action or proceeding asserting a claim against the Company arising pursuant to any provision of the Delaware General Corporation Law or the Company's Certificate of Incorporation or bylaws, or (D) any action or proceeding asserting a claim governed by the internal affairs doctrine, in each case subject to said Court of Chancery having personal jurisdiction over the indispensable parties named as defendants therein. The choice of forum provision does not apply to any actions arising under the Securities Act or the Exchange Act. The choice of forum provision may limit a stockholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with us or our directors, officers, or other employees, which may discourage such lawsuits against us and our directors, officers, and other employees. Alternatively, if a court were to find the choice of forum provision contained in our bylaws to be inapplicable or unenforceable in an action, we may incur additional costs associated with resolving such action in other jurisdictions, which could harm our business, results of operations, and financial condition.

Concentration of ownership among our existing officers, directors and principal stockholders may prevent other stockholders from influencing significant corporate decisions and depress our stock price.

Our executive officers, directors and principal stockholders (5% stockholders) together control approximately 30.2% of our 27,359,157 shares of outstanding common stock as of December 31, 2019.

Our Founder and Chief Executive Officer Mark Emalfarb, through the Mark A. Emalfarb Trust U/A/D October 1, 1987, as amended (the "MAE Trust") of which he is the trustee and beneficiary, owned approximately 15.2% of our outstanding common stock as of December 31, 2019. Further, the Francisco Trust U/A/D February 28, 1996 (the "Francisco Trust"), whose beneficiaries are the descendants and spouse of Mr. Emalfarb, owned approximately 13.8% of our outstanding common stock as of December 31, 2019. We have historically been partially controlled, managed and partially funded by Mr. Emalfarb, and affiliates of Mr. Emalfarb. Collectively, Mr. Emalfarb and stockholders affiliated with Mr. Emalfarb controlled approximately 29% of our outstanding common stock as of December 31, 2019.

Mr. Emalfarb may be able to control or significantly influence all matters requiring approval by our shareholders, including the election of directors and the approval of mergers or other business combination transactions. The interests of Mr. Emalfarb may not always coincide with the interests of other shareholders, and he may take actions that advance his personal interests and are contrary to the desires of our other shareholders.

If our existing officers, directors and principal stockholders act together, they will be able to exert a significant degree of influence over our management and affairs and over matters requiring stockholder approval, including the election of directors and approval of significant corporate transactions. In addition, this concentration of ownership may delay or prevent a change in control and might affect the market price of our shares, even when a change may be in the best interests of all stockholders. Certain of our principal stockholders may elect to increase their holdings of our common stock, which may have the impact of delaying or preventing a change of control. Moreover, the interests of this concentration of ownership may not always coincide with our interests or the interests of other stockholders, and, accordingly, they could cause us to enter into transactions or agreements, which we would not otherwise consider.

If securities or industry analysts do not commence the publication of research or reports about our business, or publish negative reports about our business, our stock price and trading volume could decline.

The trading market for our common stock will be influenced by the research and reports that securities or industry analysts publish about us or our business. We have no control over these analysts. If one or more analysts release a negative report or release a positive report and subsequently downgrade or change that report, potentially causing our stock price would likely decline. Additionally, if one or more of these analysts cease coverage of our Company or fail to regularly publish reports on us, we could lose visibility in the financial markets, which could cause our stock price or trading volume to decline.

Future issuances of shares of our common stock may negatively affect our stock price.

The sale of additional shares of our common stock, or the perception that such sales could occur, could harm the prevailing market price of shares of our common stock. These sales, or the possibility that these sales may occur, also might make it more difficult for us to sell equity securities in the future at a time and at a price that we deem appropriate.

As of December 31, 2019, there were 27,359,157 shares of our common stock outstanding. Approximately 30.2% of these outstanding common shares are beneficially owned or controlled by our executive officers, directors and principal stockholders. Shares held by our affiliates and certain of our directors, officers and employees are “restricted securities” as defined by Rule 144 (“Rule 144”) of the Securities Act and subject to certain restrictions on resale. Restricted securities may be sold in the public market only if they are registered under the Securities Act or are sold pursuant to an exemption from registration such as Rule 144.

Our common stock has a relatively small public float. As a result, sales of substantial amounts of shares of our common stock, or even the potential for such sales, may materially and adversely affect prevailing market prices for our common stock. In addition, any adverse effect on the market price of our common stock could make it difficult for us to raise additional capital through sales of equity securities.

Future sales of our common stock by existing stockholders, executive officers, or directors could depress the market price of our common stock and make it more difficult for us to sell stock in the future.

Mr. Emalfarb, our Chief Executive Officer, owns 18.8% of our common stock, and the Francisco Trust owns 13.8% of our common stock. Sales of our common stock in the public market by such stockholders or other significant stockholders, executive officers, or directors, could negatively impact the market price of our common stock. If one or more of these stockholders sell large portions of their holdings in a relatively short time, for liquidity or other reasons, the prevailing market price of our common stock could be negatively affected. These transactions and the perceived reasons for these transactions could have a negative effect on the prevailing market price of our common stock and could impair our ability to raise capital through the sale of additional equity securities.

The Company is exposed to credit risk and fluctuations in the values of its investment portfolio.

The Company’s investments can be negatively affected by liquidity, credit deterioration, financial results, market and economic conditions, political risk, sovereign risk, interest rate fluctuations or other factors. As a result, the value and liquidity of the Company’s cash, cash equivalents, and marketable and non-marketable securities may fluctuate substantially, which could result in significant losses and could have a material adverse impact on the Company’s financial condition and operating results.

We incur significant costs as a result of operating as an SEC registrant, and our management will be required to devote substantial time to compliance initiatives.

As an SEC registrant, we incur significant legal, accounting and other expenses. In addition, the Exchange Act, the Sarbanes-Oxley Act and the Dodd-Frank Wall Street Reform and Consumer Protection Act, as well as related rules implemented by the SEC, impose various requirements that require our management and other personnel to devote a substantial amount of time to compliance initiatives.

In addition, the Sarbanes-Oxley Act requires, among other things, that we maintain effective internal controls over financial reporting and disclosure controls and procedures. In particular, we must perform system and process evaluation and testing of our internal controls over financial reporting to allow management to evaluate the effectiveness of our internal controls over financial reporting, as required by Section 404 of the Sarbanes-Oxley Act. Our compliance with Section 404 requires that we incur substantial accounting expense and expend significant management time on compliance-related issues. Moreover, if we are not able to maintain compliance with the requirements of Section 404, our stock price could decline, and we could face sanctions or investigation or investigations or other material adverse effects on our business, reputation, results of operations, financial condition or liquidity.

Because we became a reporting company under the Exchange Act by means other than a traditional underwritten initial public offering, we may not be able to attract the attention of research analysts at major brokerage firms.

Because we did not become a reporting company by conducting an underwritten initial public offering, or IPO, of our common stock, and because we are not yet listed on a national securities exchange, security analysts of brokerage firms may not provide coverage of our company. In addition, investment banks may be less likely to agree to underwrite secondary offerings on our behalf than they might if we were to become a public reporting company by means of an IPO because they may be less familiar with our company as a result of more limited coverage by analysts and the media.

Increasing scrutiny and changing expectations from customers, regulators, investors, and other stakeholders with respect to our environmental, social and governance practices may impose additional costs on us or expose us to new or additional risks.

Companies are facing increasing scrutiny from customers, regulators, investors, and other stakeholders related to their environmental, social and governance practices. Investor advocacy groups, investment funds and influential investors are also increasingly focused on these practices, especially as they relate to the environment, health and safety, supply chain management, diversity and human rights. Failure to adapt to or comply with regulatory requirements or investor or stakeholder expectations and standards could negatively impact our reputation and the price of our common stock.

In addition, our customers, may adopt policies that include social and environmental requirements, or may seek to include such provisions in their contract terms and conditions. These social and environmental responsibility provisions and initiatives are subject to change, vary from jurisdiction to jurisdiction, and certain elements may be difficult and/or cost prohibitive for us to comply with given the inherent complexity and the global scope of our operations. In certain circumstances, in order to meet the requirements or standards of our customers, we may be obligated to modify our sourcing practices or make other operational choices which may require additional investments and increase our costs or result in inefficiencies.

Any of the factors mentioned above, or the perception that we or those with whom we conduct business have not responded appropriately to the growing concern for such issues, regardless of whether we are legally required to do so, may damage our reputation and have a material adverse effect on our business, financial condition, results of operations cash flows and/or the price of our common stock.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

The Company's corporate headquarters are located in Jupiter, Florida. The Company occupies approximately 4,900 square feet with a monthly rental rate and common area maintenance charges of approximately $9,700. The lease expires on June 30, 2020, and thereafter, the Company will reconsider the square footage of the leased space to align with the staffing requirements of the future operations of the Company.

The Company maintains a small satellite office in Wageningen, Netherlands. The Company occupies approximately 258 square feet with annual rental rate and common area maintenance charges of approximately $4,000. The lease will expire on January 31, 2021, and thereafter, the Company will reconsider the square footage of the leased space to align with the staffing requirements of the future operations of the Company.

We believe that our current and anticipated facilities are adequate to meet our needs for the immediate future, and that, should it be needed, suitable additional space is available to accommodate any expansion of our operations, but such space may not be available in the same building if and when such space is needed.

Item 3. Legal Proceedings

We are not currently involved in any litigation that we believe could have a materially adverse effect on our financial condition or results of operations. There is no action, suit, proceeding, inquiry or investigation before or by any court, public board, government agency, self-regulatory organization or body pending or, to the knowledge of the executive officers of our Company or any of our subsidiaries, threatened against or affecting our Company, our common stock, any of our subsidiaries or of our Company's or our Company's subsidiaries' officers or directors in their capacities as such, in which an adverse decision could have a material adverse effect.

However, from time to time, we may become involved in various lawsuits and legal proceedings which arise in the ordinary course of business. Litigation is subject to inherent uncertainties, and an adverse result in these or other matters may arise from time to time that may harm our business.

Item 4. Mine Safety Disclosures

Not applicable for our operations.

PART II

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchase of Equity Securities

Principal Market or Markets

As of December 31, 2019, Dyadic had two classes of capital stock authorized, common stock and preferred stock. Effective April 17, 2019, our common stock began trading on the NASDAQ Stock Market LLC's NASDAQ Capital Market, under the symbol "DYAI". Prior to the Company's uplisting to the NASDAQ, the Company's common stock was traded on the OTCQX market. There were no shares of preferred stock outstanding for the reported period. The trading symbol for Dyadic's common stock assigned by the Financial Industry Regulatory Authority, Inc. is "DYAI." The number of record holders of our common stock as of December 31, 2019 was 60. There are no stock dividends within the last three years. Any future determination to pay dividends will be at the discretion of our Board of Directors (the "Board").

Securities Authorized for Issuance Under Equity Compensation Plans

See Part III, Item 12.

Treasury Stock

As of December 31, 2019 and 2018, there were 12,253,502 shares of common stock held in treasury, at a cost of approximately $18.9 million, representing the purchase price on the date the shares were surrendered to the Company.

Issuer Purchases of Equity Securities

Stock Repurchase Programs

There were no repurchases of any class of the Company's capital stock in 2019.

Item 6. Selected Financial Data

We are a smaller reporting company as defined by Rule 12b-2 of the Exchange Act and are not required to provide the information required under this Item.

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

The following discussion and analysis of financial condition and results of operations should be read in conjunction with the financial statements and the notes to those statements appearing in this Annual Report. Some of the information contained in this discussion and analysis or set forth elsewhere in this Annual Report, including information with respect to our plans and strategy for our business, includes forward-looking statements that involve risks, assumptions and uncertainties. Important factors that could cause actual results to differ materially from the results described in or implied by the forward-looking statements contained in the following discussion and analysis include, but not limited to those set forth in "Item 1A. Risk Factors" in this Annual Report. All forward-looking statements included in this Annual Report are based on information available to us as of the time we file this Annual Report and, except as required by law, we undertake no obligation to update publicly or revise any forward-looking statements.

Overview

Description of Business

Dyadic International, Inc. ("Dyadic", "we", "us", "our" or the "Company") is a global biotechnology platform company based in Jupiter, Florida with operations in the United States, a satellite office in the Netherlands and currently two research organizations performing services under contract to Dyadic in Finland and Spain. Over the past two decades, the Company has developed a gene expression platform for producing commercial quantities of industrial enzymes and other proteins, and has previously licensed this technology to third parties, such as Abengoa Bioenergy, BASF, Codexis and others, for use in industrial (non-pharmaceutical) applications. This technology is based on the *Thermothelomyces heterothallica* (formerly *Myceliophthora thermophila*) fungus, which the Company named C1. The C1 technology is a robust and versatile fungal expression system for the development and production of enzymes and other proteins.

On December 31, 2015, the Company sold its industrial technology business to DuPont Danisco ("DuPont"), the industrial biosciences business of DuPont (NYSE: DD) for $75.0 million (the "DuPont Transaction"). As part of the DuPont Transaction, Dyadic retained co-exclusive rights to the C1 technology for use in all human and animal pharmaceutical applications, and currently has the exclusive ability to enter into sub-license agreements (subject to the terms of the license and certain exceptions). DuPont retained certain rights to utilize the C1 technology in pharmaceutical applications, including the development and production of pharmaceutical products, for which it will be required to make royalty payments to Dyadic upon commercialization. In certain circumstances, Dyadic may owe a royalty to either DuPont or certain licensors of DuPont, depending upon whether Dyadic elects to utilize certain patents either owned by DuPont or licensed in by DuPont.

After the DuPont Transaction, the Company has been focused on the biopharmaceutical industry, specifically in further improving and applying the proprietary C1 technology into a safe and efficient gene expression platform to help speed up the development, lower production costs and improve the performance of biologic vaccines and drugs at flexible commercial scales. We believe that the C1 technology could be beneficial in the development and manufacturing of human and animal vaccines and drugs, such as virus-like particles (VLPs), protein antigens, monoclonal antibodies (mAbs), Bi-Specific antibodies, Fab antibody fragments, Fc-Fusion proteins, as well as other therapeutic enzymes and proteins. The Company is aiming to develop products such as innovative vaccines and drugs, biosimilars and/or biobetters.

Critical Accounting Policies, Estimates, and Judgments

The preparation of these consolidated financial statements in accordance with U.S. generally accepted accounting principles ("GAAP") requires management to make estimates and judgments that affect the reported amount of assets and liabilities and related disclosure of contingent assets and liabilities at the date of our consolidated financial statements and the reported amounts of revenues and expenses during the applicable period. Actual results may differ from these estimates under different assumptions or conditions. Such differences could be material to the consolidated financial statements.

We define critical accounting policies as those that are reflective of significant judgments and uncertainties and which may potentially result in materially different results under different assumptions and conditions. In applying these critical accounting policies, our management uses its judgment to determine the appropriate assumptions to be used in making certain estimates. These estimates are subject to an inherent degree of uncertainty. Our critical accounting policies include the following:

Revenue Recognition

The Company has no pharmaceutical products approved for sale at this point, and all of our revenue to date has been research revenue from third-party collaborations and government grants. The Company is expected to generate future revenue from license agreements and collaborative arrangements, which may include upfront payments for licenses or options to obtain a license, payment for research and development services and milestone payments, in the form of cash or non-cash consideration.

Revenue related to research collaborations and agreements: The Company typically performs research and development services as specified in each respective agreement on a best efforts basis, and recognizes revenue from research funding under collaboration agreements in accordance with the 5-step process outlined in ASC Topic 606 ("Topic 606"): (i) identify the contract(s) with a customer; (ii) identify the performance obligations in the contract; (iii) determine the transaction price; (iv) allocate the transaction price to the performance obligations in the contract; and (v) recognize revenue when (or as) the entity satisfies a performance obligation. We recognize revenue when we satisfy a performance obligation by transferring control of the service to a customer in an amount that reflects the consideration that we expect to receive. Since the performance obligation under our collaboration agreements is generally satisfied over time, we elected to use the input method under Topic 606 to measure the progress toward complete satisfaction of a performance obligation.

Under the input method, revenue will be recognized on the basis of the entity's efforts or inputs to the satisfaction of a performance obligation (e.g., resources consumed, labor hours expended, costs incurred, or time elapsed) relative to the total expected inputs to the satisfaction of that performance obligation. The Company believes that the cost-based input method is the best measure of progress to reflect how the Company transfers its performance obligation to a customer. In applying the cost-based input method of revenue recognition, the Company uses actual costs incurred relative to budgeted costs to fulfill the performance obligation. These costs consist primarily of full-time equivalent effort and third-party contract costs. Revenue will be recognized based on actual costs incurred as a percentage of total budgeted costs as the Company completes its performance obligations.

A cost-based input method of revenue recognition requires management to make estimates of costs to complete the Company's performance obligations. In making such estimates, significant judgment is required to evaluate assumptions related to cost estimates. The cumulative effect of revisions to estimated costs to complete the Company's performance obligations will be recorded in the period in which changes are identified and amounts can be reasonably estimated. A significant change in these assumptions and estimates could have a material impact on the timing and amount of revenue recognized in future periods.

Revenue related to sublicensing agreements: If the sublicense to the Company's intellectual property is determined to be distinct from the other performance obligations identified in the arrangement, the Company recognizes revenue allocated to the license when technology is transferred to the customer and the customer is able to use and benefit from the license.

Milestone payments: At the inception of each arrangement that includes development, commercialization, and regulatory milestone payments, the Company evaluates whether the achievement of the milestones is considered probable and estimates the amount to be included in the transaction price. If the milestone payment is in exchange for a sublicense and is based on the sublicensee's subsequent sale of product, the Company recognizes milestone payment by applying the accounting guidance for royalties. To date, the Company has not recognized any milestone payment revenue resulting from any of its sublicensing arrangements.

Royalties: With respect to licenses deemed to be the predominant item to which the sales-based royalties relate, including milestone payments based on the level of sales, the Company recognizes revenue at the later of (i) when the related sales occur or (ii) when the performance obligation to which some or all of the royalty has been allocated has been satisfied (or partially satisfied). To date, the Company has not recognized any royalty revenue resulting from any of its sublicensing arrangements.

We invoice customers based on our contractual arrangements with each customer, which may not be consistent with the period that revenues are recognized. When there is a timing difference between when we invoice customers and when

revenues are recognized, we record either a contract asset (unbilled accounts receivable) or a contract liability (deferred research and development obligations), as appropriate. If upfront fees or considerations related to sublicensing agreement are received prior to the technology transfer, the Company will record the amount received as deferred revenue from licensing agreement.

We are not required to disclose the value of unsatisfied performance obligations for (i) contracts with an original expected length of one year or less and (ii) contracts for which we recognize revenue at the amount to which we have the right to invoice for services performed.

The Company adopted a practical expedient to expense sales commissions when incurred because the amortization period would be one year or less.

Accrued Research and Development Expenses

In order to properly record services that have been rendered but not yet billed to the Company, we review open contracts and purchase orders, communicate with our personnel and we estimate the level of service performed and the associated cost incurred for the service when we have not yet been invoiced or otherwise notified of the actual cost. The majority of our service providers invoice us monthly or quarterly in arrears for services performed or when contractual milestones are met. We make estimates of our accrued expenses as of each balance sheet date in our consolidated financial statements based on facts and circumstances known to us at that time. We periodically confirm the accuracy of our estimates with the service providers and make adjustments if necessary. Examples of accrued research and development expenses include amounts owed to contract research organizations, to service providers in connection with commercialization and development activities.

Stock-Based Compensation

We have granted stock options and restricted stock to employees, directors and consultants. The fair value of each option award is estimated on the date of grant using the Black-Scholes option-pricing model. The Black-Scholes model considers volatility in the price of our stock, the risk-free interest rate, the estimated life of the option, the closing market price of our stock and the exercise price. For purposes of the calculation, we assumed that no dividends would be paid during the life of the options and restricted stock and applied a discount to reflect the lack of marketability due to the holding period restriction of its shares under Rule 144 prior to the Company's April 2019 uplisting to NASDAQ. We also used the weighted-average vesting period and contractual term of the option as the best estimate of the expected life of a new option (except for our CEO which is 5 years). The Company performs a review of assumptions used in the Black-Scholes option-pricing model on an annual basis. During the Company's annual review of its volatility assumption in 2018 and 2019, the Company determined that it would be appropriate to use the Company's historical volatility since 2016, as the DuPont Transaction resulted in significant changes in the Company's business and capital structure. The change in assumption was effective January 1, 2018 and only impacts new options granted in 2018 and thereafter.

The estimates utilized in the Black-Scholes calculation involve inherent uncertainties and the application of management judgment. These estimates are neither predictive nor indicative of the future performance of our stock. As a result, if other assumptions had been used, our recorded share-based compensation expense could have been materially different from that reported. In addition, because some of the options and restricted stock issued to employees, consultants and other third-parties vest upon the achievement of certain milestones, the total ultimate expense of share-based compensation is uncertain.

In connection with board member and employee terminations, the Company may modify certain terms to outstanding share-based awards. We have recorded charges related to these modifications based on the estimated fair value of the share-based options immediately prior to and immediately after the modification occurs, with any incremental value being charged to expense. We have used the Black-Scholes pricing model in this valuation process, and this requires management to use various assumptions and estimates. Future modifications to share-based compensation transactions may result in significant expenses being recorded in our consolidated financial statements.

Accounting for Income Taxes

The Company accounts for income taxes under the asset and liability method in accordance with ASC Topic 740, "Income Taxes". Under this method, income tax expense /(benefit) is recognized for: (i) taxes payable or refundable for the current year and (ii) deferred tax consequences of temporary differences resulting from matters that have been recognized in an entity's financial statements or tax returns. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect on

deferred tax assets and liabilities of a change in tax rates is recognized in the results of operations in the period that includes the enactment date. A valuation allowance is provided to reduce the deferred tax assets reported if based on the weight of the available positive and negative evidence, it is more likely than not some portion or all the deferred tax assets will not be realized.

In determining taxable income for the Company's consolidated financial statements, we are required to estimate income taxes in each of the jurisdictions in which we operate. This process requires the Company to make certain estimates of our actual current tax exposure and assessment of temporary differences between the tax and financial statement recognition of revenue and expense. In evaluating the Company's ability to recover its deferred tax assets, the Company must consider all available positive and negative evidence including its past operating results, the existence of cumulative losses in the most recent years and its forecast of future taxable income. Significant management judgment is required in determining our provision for income taxes, deferred tax assets and liabilities and any valuation allowance recorded against our net deferred tax assets.

The Company is required to evaluate the provisions of ASC 740 related to the accounting for uncertainty in income taxes recognized in a company's financial statements. ASC 740 prescribes a comprehensive model for how a company should recognize, present, and disclose uncertain positions that the company has taken or expects to take in its tax return. For those benefits to be recognized, a tax position must be more-likely-than-not to be sustained upon examination by taxing authorities. Differences between tax positions taken or expected to be taken in a tax return and the net benefit recognized and measured pursuant to the interpretation are referred to as "unrecognized benefits." A liability should be recognized (or amount of net operating loss carry forward or amount of tax refundable is reduced) for unrecognized tax benefits, because it represents a company's potential future obligation to the taxing authority for a tax position that was not recognized as a result of applying the provision of ASC 740.

The Company classifies accrued interest and penalties related to its tax positions as a component of income tax expense. The Company currently is not subject to U.S. federal, state and local tax examinations by tax authorities for the years before 2014.The United States Internal Revenue Service (the "IRS") completed its review of the Company's 2015 tax filing on October 17, 2017, and no changes were required. See Note 4 to the Consolidated Financial Statements in Section F-1 for further information on the examination of the Company's 2016 tax return.

Fair Value Measurements

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The Company utilized various methods, including income, cost and market approaches to determine the fair value of its investments in equity interest, which may fall into Level 3 of the fair value hierarchy because of the significant unobservable inputs utilized in these valuation approaches. These inputs can be readily observable, market corroborated, or generally unobservable inputs. The Company utilizes valuation techniques that maximize the use of observable inputs and minimize the use of unobservable inputs. Our key inputs included, but were not limited to, significant management judgments and estimates, including projections of the timing and amount of the project's cash flows, determination of a discount rate for the income approach, market multipliers, probability weighting of potential outcomes of legal and regulatory proceedings, and weighting of the valuations produced by the income, cost and market approaches.

The Company bases its fair value estimates on assumptions it believes to be reasonable, but which are unpredictable and inherently uncertain. Actual future results may differ from those estimates.

Off-Balance Sheet Arrangements

We do not have any off-balance sheet arrangements.

Recent Accounting Pronouncements

See Note 1 to the Consolidated Financial Statements for information about recent accounting pronouncements .

Results of Operations

Year Ended December 31, 2019 Compared to the Year End December 31, 2018

Revenue and Cost of Revenue

The following table summarizes the Company's revenue and cost of research and development revenue for the years ended December 31, 2019 and 2018:

	Year Ended December 31,	
	2019	2018
Revenue	$ 1,681,076	$ 1,295,451
Cost of research and development revenue	$ 1,459,701	$ 1,027,278

The increases in revenue and cost of research and development revenue for the year ended December 31, 2019 reflect ten research collaborations compared to six research collaborations for the year ended December 31, 2018.

Research and Development Expenses

Research and development costs are expensed as incurred and primarily include salary and benefits of research personnel, third-party contract research organization services and supply costs.

Research and development expenses for the year ended December 31, 2019 increased to approximately $3,088,000 compared to $2,102,000 for the year ended December 31, 2018. The increase primarily reflects the costs of additional internal research projects.

Research and development expenses - related party, for the year ended December 31, 2019, decreased to approximately $869,000 compared to $1,216,000 for the year ended December 31, 2018. The decrease is primarily due to completion of a research service agreement with BDI in June 2019.

General and Administrative Expenses

General and administrative expenses for the year ended December 31, 2019, increased 22.0% to approximately $5,520,000 compared to $4,523,000 for the year ended December 31, 2018. The increase principally reflects increases in noncash share-based compensation expenses of $717,000 related to 2019 stock options awards and options vested upon the April 2019 uplisting to NASDAQ, business development and investor relations costs of $186,000, insurance costs of $138,000, and legal costs and NASDAQ uplisting expenses of $125,000, offset by reductions in executive compensation costs, including the separation of the Company's former CFO, of $168,000, which was a one-time expense in 2018.

Foreign Currency Exchange

Foreign currency exchange loss for the year ended December 31, 2019, was approximately $28,000 compared to $21,000 for the year ended December 31, 2018. The increase reflects the currency fluctuation of the Euro in comparison to the U.S. dollar.

Interest Income

Interest income for the year ended December 31, 2019, increased 10.1% to approximately $985,000 compared to $895,000 for the year ended December 31, 2018. The increase reflects the higher yield on the Company's investment grade securities, which are classified as held-to-maturity.

Income Taxes

The Company had net operating loss ("NOL") carryforwards available in 2019 that will begin to expire in 2037. As of December 31, 2019, and 2018, the Company had NOLs in the amount of approximately $19.7 million and $9.1 million, respectively.

For the year ended December 31, 2018, the Company's current income tax benefit of $1.0 million was generated from the corporate Alternative Minimum Tax credit refund resulting from the Tax Cuts and Jobs Act ("TCJA").

Net Loss

Net loss for the year ended December 31, 2019 was approximately $8.3 million compared to a net loss of $5.7 million for the year ended December 31, 2018. The change was primarily due to increases in general and administrative expenses of approximately $1.0 million, research and development expenses of approximately $0.6 million, and the prior year income tax benefit from the corporate Alternative Minimum Tax credit refund of approximately $1.0 million.

Liquidity and Capital Resources

Our primary source of cash has been the cash received from the DuPont Transaction in December 2015, interest income received from investment grade securities, and funding from our research collaboration agreements. Between January 2016 and August 2018, the Company repurchased a total of 14,390,254 shares of its common stock from its existing cash on hand, for an aggregate purchase price of $21,814,530 at a weighted average price of $1.52 per share. As of December 31, 2019, our investment balance includes $29.7 million short-term investments with contractual maturities of twelve (12) months of less, including interest receivable, and $1.5 million long-term investments with contractual maturities beyond twelve (12) months. In June 2019, the Company's liquidity was further improved with the receipt of approximately $0.5 million tax refund resulting from the elimination of corporate Alternative Minimum Tax (AMT) under the TCJA. An additional $0.5 million AMT tax refund is expected to be received through 2021.

Our ability to achieve profitability depends on a number of factors, including our scientific results and our ability to continue to obtain funded research and development collaborations from industry and government programs, as well as sub-license agreements. We may continue to incur substantial operating losses even if we begin to generate revenues from research and development and licensing. Our primary future cash needs are expected to be for general operating activities, including our business development and research expenses, as well as additional costs as an SEC reporting and NASDAQ listed company. We believe that our existing cash position and investments in short-term and long-term investment grade securities will be adequate to meet our operational, business, and other liquidity requirements for at least the next twelve (12) months.

At December 31, 2019, cash and cash equivalents were approximately $4.8 million compared to $2.4 million at December 31, 2018. The carrying value of investment grade securities, including accrued interest at December 31, 2019 was $31.2 million compared to $39.1 million at December 31, 2018.

Net cash used in operating activities for the year ended December 31, 2019 of approximately $5.8 million resulted from a net loss of $8.3 million, offset by share-based compensation expense of $1.2 million, amortization of held-to-maturity securities of $0.2 million, BDI research and development activities of $0.3 million and changes in other operating assets and liabilities of $0.8 million.

Net cash used in operating activities for the year ended December 31, 2018 of approximately $4.4 million resulted from a net loss of $5.7 million, and changes in other operating assets and liabilities of $0.8 million, offset by stock based compensation expense of $0.5 million, amortization of held-to-maturity securities of $0.7 million, and BDI research and development activities of $0.9 million.

Net cash provided by investing activities for the year ended December 31, 2019 was approximately $7.7 million compared to $3.3 million for the year ended December 31, 2018. Cash flows from investing activities in 2019 and 2018 was primarily related to proceeds from maturities, net of purchases of investment grade debt securities.

Net cash provided in financing activities for the year ended December 31, 2019 was approximately $0.6 million compared to net cash used in financing activities of $2.3 million for the year ended December 31, 2018. Cash flows provided in financing activities in 2019 were primarily related to proceeds received from the exercise of stock options. Cash flows used in in financing activities in 2018 were primarily related to repurchases of our common stock.

Item 7A. Quantitative and Qualitative Disclosures about Market Risk

We are a smaller reporting company as defined by Rule 12b-2 of the Exchange Act and are not required to provide the information required under this item.

Item 8. Financial Statements and Supplementary Data

All financial statements required pursuant to this item, including the report of our independent registered public accounting firm, are presented beginning on page F-1.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None.

Item 9A. Controls and procedures

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our Chief Executive Officer and our Chief Financial Officer, evaluated the effectiveness of our disclosure controls and procedures as of December 31, 2019. The term "disclosure controls and procedures," as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended, or the Exchange Act, means controls and other procedures of a company that are designed to ensure 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 SEC rules and forms. Based on the evaluation of our disclosure controls and procedures as of December 31, 2019, our Chief Executive Officer and Chief Financial Officer concluded that, as of such date, our disclosure controls and procedures were effective.

Management's 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) under the Exchange Act. Our management conducted an assessment of the effectiveness of our internal control over financial reporting as of December 31, 2019 based on the criteria set forth in the Internal Control-Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on the assessment, our management has concluded that our internal control over financial reporting was effective as of December 31, 2019. This Report does not include an attestation report of our independent registered public accounting firm regarding internal control over financial reporting. Management's report was not subject to attestation by our independent registered public accounting firm pursuant to the rules of the SEC that permit us to provide only management's report in this Report because we are a "smaller reporting company."

Changes in Internal Controls Over Financial Reporting

There were no changes in our internal control over financial reporting identified in connection with the evaluation required by Rule 13a-15(d) and 15d- 15(d) of the Exchange Act that occurred during the year ended December 31, 2019 that materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Inherent Limitation on Effectiveness of Controls

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, the design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, within our Company have been detected. These inherent limitations include the realities that judgments in decision-making can be faulty, and that breakdowns can occur because of a simple error or mistake. Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people, or by management override of the controls. The design of any system of controls is also based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions; over time, controls may become inadequate because of changes in conditions, or the degree of compliance with policies or procedures may deteriorate. Because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected.

Item 9B. Other Information

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

Our Board currently consists of six directors serving on a classified board, consisting of three classes. The directors in each class serve a three-year term. The terms of each class expire at successive annual meetings so that the stockholders elect one class of directors at each annual meeting. Directors appointed due to an increase in the size of the Board may be filled by the Board for a term of office continuing only until the next election of directors by the Company's stockholders. Our directors and executive officers and certain key employees as of December 31, 2019 are as follows:

Name	Age	Current Position(s)	Director Since	Class and Year in Which Term Will Expire
Mark A. Emalfarb [1][5]	64	President, Chief Executive Officer, Director	2004	Class III-2022
Ping W. Rawson [6]	44	Chief Financial Officer	—	—
Ronen Tchelet, Ph.D.	62	Vice President of Research and Business Development	—	—
Matthew S. Jones	42	Managing Director of Business Development and Licensing	—	—
Michael P. Tarnok [1][2][3][4]	65	Chairman, Director	2014	Class III-2022
Jack L. Kaye [1][2][3]	76	Director	2015	Class II -2021
Seth J. Herbst, MD [1][3][4][5]	62	Director	2008	Class I -2020
Arindam Bose, Ph.D. [1][2][5]	67	Director	2016	Class I -2020
Barry C. Buckland, Ph.D. [1][4][5]	72	Director	2018	Class II -2021

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Notes:
[1] Member of the Board of Directors.
[2] Member of the Audit Committee (the "Audit Committee").
[3] Member of the Compensation Committee (the "Compensation Committee").
[4] Member of the Nominating Committee (the "Nominating Committee").
[5] Member of the Science and Technology Committee (the "Science and Technology Committee").
[6] Ms. Rawson was promoted to Chief Financial Officer in June 2019, and she previously served as the Company's Chief Accounting Officer since March 2018. Prior to that, Ms. Rawson was the Company's Director of Financial Reporting.

EXECUTIVE OFFICERS

Mark A. Emalfarb, President, Chief Executive Officer and Director

Mark A. Emalfarb is the founder of Dyadic, and currently serves as the President, Chief Executive Officer and a member of the Board of Directors of the Company. He has been a member of Dyadic's Board and has previously served as its Chairman from October 2004 until April 2007 and from June 2008 until January 2015. Since founding the predecessor to Dyadic in 1979, Mr. Emalfarb has served as a Director, President and Chief Executive Officer for substantially all of that time and has successfully led and managed the evolution of Dyadic from its origins as a pioneer and leader in providing ingredients used in the stone-washing of blue jeans to the discovery, development, manufacturing and commercialization of specialty enzymes used in various industrial applications and the development of an integrated technology platform based on Dyadic's patented and proprietary C1 fungal microorganism. Mr. Emalfarb is an inventor of over 25 U.S. and foreign biotechnology patents and patent applications resulting from discoveries related to the patented and proprietary C1 fungus and has been the architect behind its formation of several strategic research and development, manufacturing and marketing relationships with U.S. and international partners. Mr. Emalfarb earned his B.A. degree from the University of Iowa in 1977.

Ping W. Rawson, CPA, MBA, Chief Financial Officer

Ping W. Rawson was appointed as our Chief Financial Officer in June 2019. She assumes the duties of the Company's principal financial officer and principal accounting officer, and is responsible for all aspects of finance, accounting, tax and treasury. Ms. Rawson previously served as the Company's Chief Accounting Officer since March 2018. Prior to joining Dyadic in June 2016 as our Director of Financial Reporting, Ms. Rawson served as a technical accounting management position for ADT security services, where she led accounting and financial reporting workstream for acquisition, integration and restructuring. Prior to that, Ms. Rawson was an accounting research principal for NextEra Energy, Inc. (Florida Power & Light Company), where she was responsible for accounting research and new standards implementation. Ms. Rawson's experience also includes prior employment at Deloitte LLP in New York City and Florida offices, where she was a subject matter specialist

for derivatives, financial instruments and valuation, providing audit, SEC reporting, and capital markets consulting services to large banks and multinational public companies. Ms. Rawson holds both an M.B.A. in Finance, and an M.S. in Accounting from the State University of New York at Buffalo, and a B.S. in Economics from Guangdong University of Foreign Studies in China. She is a certified public accountant in the state of New York.

Ronen Tchelet, Ph.D., Vice President of Research and Business Development

Ronen Tchelet, Ph.D. joined Dyadic in May 2014, and has been our Vice President of Research and Business Development since January 2016. Since joining Dyadic, Dr. Tchelet has been a key contributor to Dyadic's transformation into a pharmaceutical biotech company. Prior to joining Dyadic, Dr. Tchelet was the founder and Managing Director of Codexis Laboratories Hungary kft. ("CLH") and a Vice President of Codexis Inc. from 2007 through 2014. While at CLH, Dr. Tchelet established a state-of-the-art laboratory for strain engineering and all aspects of fermentation including process optimization and scale up. During this time period, Dr. Tchelet also led a collaboration that successfully developed C1 technology for the Biofuel and the Bio-Industrial enzymes applications. Dr. Tchelet's experience in the pharmaceutical industry includes prior employment at TEVA Pharmaceutical Industries LTD ("TEVA"), API Division during the late 2000's to 2006. While at TEVA, he served as a Chief Technology Officer of Biotechnology and led TEVA's Biotechnology Research and Development fermentation plant in Hungary. Also, during the period of 2000 through 2005, Dr. Tchelet was the Manager of Quality Assurance for TEVA's flag ship innovative drug, COPAXONE®. Throughout his career, Dr. Tchelet has led several Biotechnology projects that have encompassed all aspects of research and development, operations management, and manufacturing of API's and biologics. Dr. Tchelet received his Ph.D. in Molecular Microbiology and Biotechnology from Tel Aviv University in 1993 and did his postdoctoral work as an EERO fellow at the Institute of Environmental Science and Technology (EAWAG) in Switzerland.

Matthew S. Jones, Managing Director of Business Development and Licensing

Matthew S. Jones joined Dyadic as a consultant in May 2016 and serves as our consultant commercial officer / Business Development and Licensing to lead Dyadic's strategic partnerships, licensing and commercial opportunities within and across the biopharmaceutical industry. A veteran of the life sciences industry with two decades of commercial deal making and leadership experience, Mr. Jones has developed and implemented strategies which have delivered revenue growth, organically and through acquisitions, for a diverse range of life science businesses both in Europe and the US. Prior to joining Dyadic, Mr. Jones served as Chief Commercial Officer for Concept Life Sciences from its formation until 2016. Prior to that, Mr. Jones advised several private equity buy and builds and was also Vice President of Global Sales & Business Development at Lonza Biologics, where he implemented new income-generating revenue streams and captured enterprise synergies in manufacturing, research and client/vendor relationships. From 2009 to 2012, Mr. Jones served as Executive Vice President of Business Development & Marketing at Ricerca Biosciences LLC, responsible for strategic partnerships, royalty and asset license optimization and marketing effectiveness and where Mr. Jones supported the Bain Ventures trade sale of the business toward WiL research. From 2003 to 2009, Mr. Jones was Senior Vice President of Business Development at MDS Pharma Services Inc., where he was responsible for global biopharmaceutical and clinical commercial growth strategies. Earlier in his career, Mr. Jones also held senior level leadership roles within the biopharmaceutical industry with Alkermes, Inc. and GlaxoSmithKline plc. Mr. Jones is a graduate of Warwick University and London Business School.

NON-EMPLOYEE DIRECTORS

Michael P. Tarnok, Chairman, Director

Michael P. Tarnok joined the Board on June 12, 2014 and has served on the Company's Audit, Nominating and Compensation Committees, and on January 12, 2015 Mr. Tarnok was appointed Dyadic's Chairman of the Board. Mr. Tarnok is also currently a board member of Ionetix, Inc. In addition, Mr. Tarnok's prior board service includes Global Health Council, and Keryx Biopharmaceuticals, Inc., where he also served as Chairman of the board of directors. Mr. Tarnok is a seasoned finance and operational executive with extensive pharmaceutical industry experience in a wide range of functional areas. He spent the majority of his career at Pfizer Inc., which he joined in 1989 as Finance Director-US Manufacturing and from 2000 to 2007 served as a Senior Vice President in Pfizer's US Pharmaceutical Division. In this position, Mr. Tarnok managed multiple responsibilities for the division including, finance, access contracting, trade management, information technology, Sarbanes-Oxley compliance and the Greenstone generics division. Prior to joining Pfizer, Mr. Tarnok worked primarily in financial disciplines for ITT Rayonier, Inc., Celanese Corporation and Olivetti Corporation of America. Mr. Tarnok earned an M.B.A. in Marketing from New York University and a B.S. in Accounting from St. John's University.

Jack Kaye, Director

Jack L. Kaye joined the Board in May 2015 and currently serves as chairman of the Company's Audit Committee. He also serves on the Company's Compensation Committee. Mr. Kaye is currently the Chairman of the audit committee and a member of the compensation committee and special transaction pricing committee of uniQure B.V. where he has served since May 2016. Mr. Kaye's prior board service includes Keryx Biopharmaceuticals Inc., a position he has held from 2006 to May 2016 where he served as Chairman of the audit committee and he was also a member of their nominating and governance committee. He also served on the boards of Tongli Pharmaceuticals (USA) Inc. and Balboa Biosciences, Inc., where he served as Chairman of both audit committees. In the past, Mr. Kaye was selected to participate on several dissident board slates which included the Astellas, Inc./OSI, Roche Pharmaceuticals, Inc./Illumina and the Horizon, Inc./Depomed M&A transactions. Mr. Kaye was a partner at Deloitte LLP from 1978 until May 2006, when he retired. At Deloitte, Mr. Kaye was responsible for serving a diverse client base of public and private, global and domestic companies in a variety of industries. Mr. Kaye has extensive experience consulting with clients on accounting and reporting matters, private and public debt financings, SEC rules and regulations and corporate governance/ Sarbanes-Oxley issues. In addition, he has served as Deloitte's Tristate liaison with the banking and finance community and assisted clients with numerous merger and acquisition transactions. Mr. Kaye served as Partner-in-Charge of Deloitte's Tri-State Core Client practice, a position he held for more than twenty years. He earned a B.B.A. from Baruch College and is a Certified Public Accountant.

Seth J. Herbst, MD, Director

Seth J. Herbst, MD has been on the Board since June 2008 and is a board-certified obstetrician/gynecologist who is also board certified in advanced laparoscopic and minimally invasive gynecologic surgery. Dr. Herbst is the founder and President of the Institute for Women's Health and Body ("IWHB") in May of 1997, an OB/GYN practice with multiple locations in Palm Beach County, Florida. He is the co-founder of Visions Clinical Research since 1999, which performs medical and surgical clinical trials throughout the United States. Dr. Herbst founded IWHB of Palm Beach, a Physician Management Group that currently employs 43 providers, which he actively directs the operations on a daily basis. Dr. Herbst is a member of the board of directors of Palms West Hospital in Loxahatchee, Florida. Dr. Herbst is also a consultant for multiple medical device companies in the United States and a member of medical advisory boards for these and other companies. He received his B.S. degree from American University in 1978 and his medical degree from Universidad del Noreste School of Medicine in Tampico, Mexico in 1983. Dr. Herbst completed his OB/GYN residency and was Chief Resident at Long Island College Hospital in Brooklyn, New York.

Arindam Bose, Ph.D., Director

Arindam Bose, Ph.D. joined the Board on August 15, 2016 and serves on the Company's Audit and Science and Technology Committees. Dr. Bose retired from Pfizer Worldwide Research & Development in 2016 after 34 years in leadership roles in bioprocess development and clinical manufacturing. Dr. Bose's final position at Pfizer was Vice-President, Biotherapeutics Pharmaceutical Sciences External Affairs and Biosimilar Strategy with responsibility for external sourcing, competitive intelligence and external influencing as well as for executing the technical development plan for Pfizer's entry into biosimilars. He is widely recognized as a Key Thought Leader in the biopharmaceutical industry. Dr. Bose has served as the Chair of the Biologics and Biotechnology Leadership Committee of the Pharmaceutical Research and Manufacturers of America (PhRMA), the chief advocacy arm of the US pharmaceutical industry. His outstanding accomplishments and service to the profession have been recognized by his election as "Fellow" of 3 leading professional organizations: American Chemical Society, American Institute of Chemical Engineers and American Institute for Medical and Biological Engineering. Dr. Bose was elected to the US National Academy of Engineering in February 2017 for innovative research in biologics manufacturing. Dr. Bose currently provides consulting services in bioprocessing to several start-up biotechnology companies including a part-time process development management role at Akero Therapeutics (NASDAQ: AKRO). He received a Ph.D. in chemical engineering from Purdue University, a M.S. from the University of Michigan, Ann Arbor and a B. Tech from the Indian Institute of Technology, Kanpur.

Barry C. Buckland, Ph.D., Director

Barry Buckland, Ph.D. joined the Board in January 2018. Dr. Buckland retired from Merck Research Laboratories in 2009 after 28 years of contributions to the Bioprocess R&D group including more than 12 years as leader in the position of Vice President. Since leaving the Merck Research Laboratories, Dr. Buckland has headed up his own consulting company (BiologicB, LLC). He also is President of Engineering Conferences International (ECI), a not for profit organization which organizes prestigious conferences with an engineering focus. Dr. Buckland has chaired successful conference such as Microbial Engineering I and Vaccine Technology Conferences I to IV. He is also a visiting professor at University College London in the Biochemical Engineering Department and is the author or co-author of more than 70 publications. His previous board experience includes Enumeral Biomedical and Mucosis. Dr. Buckland was a Senior Advisor to Protein Sciences until they were purchased by Sanofi in 2017. Dr. Buckland became Executive Director of NIIMBL (National Institute for Innovation for

Manufacturing Biopharmaceuticals) in 2017. Dr. Buckland was elected to the USA National Academy of Engineering in 1997. In 2008, Dr. Buckland was awarded the ACS Marvin Johnson award for Biotechnology. In 2009, Dr. Buckland was awarded the Discoverers Award by the Pharmaceutical Research and Manufacturers of America (PhRMA) for his role in the discovery and development of GARDASIL, an effective vaccine against HPV. He was one of three recipients.

Involvement in Certain Legal Proceedings

None of our directors or executive officers have been convicted in any criminal proceeding during the past 10 years and none of them have been parties to any judicial or administrative proceeding during the past 10 years that resulted in a judgment, decree or final order enjoining them from future violations of, or prohibiting activities subject to, federal or state securities laws or a finding of any violation of federal or state securities laws or commodities laws. Similarly, no bankruptcy petitions have been filed by or against any business or property of any of our directors or officers, nor has any bankruptcy petition been filed against a partnership or business association in which these persons were general partners, directors or executive officers.

Related Party Relationships

There are no family relationships between or among any of our directors or executive officers.

There are no arrangements or understandings between any two or more of our directors or executive officers, and there is no arrangement, plan or understanding as to whether non-management stockholders will exercise their voting rights to continue to elect the current Board. There are also no arrangements, agreements or understandings between non-management stockholders that may directly or indirectly participate in or influence the management of our affairs.

Board of Directors and Committees

The Board is responsible for directing and overseeing the business and affairs of the Company. The Board represents the Company's shareholders and its primary purpose is to build long-term shareholder value. The Board meets on a regularly scheduled basis during the year to review significant developments affecting the Company and to act on matters that, in accordance with good corporate governance, require Board approval. It also holds annual meetings and acts by unanimous written consent when an important matter requires Board action between scheduled meetings.

We have a classified board of directors currently fixed at six members. The Board has four committees: Audit, Compensation, Nominating, and Science and Technology. Currently, Mr. Michael P. Tarnok serves as Chairman of the Board of Directors. Mr. Jack Kaye serves as Chairman of the Audit Committee, Mr. Michael Tarnok serves as Chairman of the Compensation Committee, Dr. Seth Herbst serves as Chairman of the Nominating Committee, and Dr. Arindam Bose serves as Chairman of the Science and Technology Committee.

Audit Committee. The Audit Committee has oversight responsibility for quality and integrity of our consolidated financial statements. A copy of the Charter of the Audit Committee is available on our website, located at www.Dyadic.com. The committee meets privately with members of our independent registered public accounting firm, has the sole authority to retain and dismiss the independent registered public accounting firm and reviews its performance and independence from management. The independent registered public accounting firm has unrestricted access and reports directly to the Audit Committee. The primary functions of the Audit Committee are to oversee (i) the audit of our consolidated financial statements and (ii) our internal financial and accounting processes.

The SEC and NASDAQ have established rules and regulations regarding the composition of audit committees and the qualifications of audit committee members. Our Board has examined the composition of our Audit Committee and the qualifications of our Audit Committee members in light of the current rules and regulations governing audit committees. Based upon this examination, our Board has determined that each member of our Audit Committee is independent and is otherwise qualified to be a member of our Audit Committee in accordance with the rules of the SEC and NASDAQ.

Additionally, the SEC requires that at least one member of the audit committee have a heightened level of financial and accounting sophistication. Such a person is known as the audit committee financial expert under the SEC's rules. Our Board has determined that Mr. Kaye is an audit committee financial expert, as defined in Item 407(d)(5) of Regulation S-K and is an independent member of our Board and our Audit Committee. Please see Mr. Kaye's biography included in this Annual Report for a description of his relevant experience.

Compensation Committee. The duties and responsibilities of the Compensation Committee are set forth in the Charter of the Compensation Committee. A copy of the Charter of the Compensation Committee is available on our website, located at www.Dyadic.com. As discussed in its charter, among other things, the duties and responsibilities of the Compensation Committee include evaluating the performance of the Chief Executive Officer, Chief Financial Officer and other key personnel of the Company, including, but not limited to, our incentive and equity-based plans. The Compensation Committee evaluates the performance of the Chief Executive Officer, Chief Financial Officer and other key personnel of the Company on an annual basis and reviews and approves on an annual basis all compensation programs and awards relating to such officers and key personnel. The Compensation Committee applies discretion in the determination of individual executive compensation packages to ensure compliance with the Company's compensation philosophy. The Chief Executive Officer makes recommendations to the Compensation Committee with respect to the compensation packages for officers other than himself.

Nominating Committee. The Nominating Committee's functions include: establishing criteria for the selection of new directors to serve on the Board; identifying individuals believed to be qualified as candidates to serve on the Board; recommending for selection by the Board the candidates for all directorships to be filled by the Board or by the shareholders at an annual or special meeting; reviewing the Board's committee structure and recommending to the Board the directors to serve on the committees of the Board; recommending members of the Board to serve as the respective chairs of the committees of the Board; developing and recommending to the Board, for its approval, an annual self-evaluation process of the Board and its committees and, based on those results, making recommendations to the Board regarding those Board processes; and performing any other activities consistent with the committee's charter, our bylaws and applicable law as the committee or the Board deems appropriate. A copy of the Charter of the Nominating Committee is available on our website, located at www.Dyadic.com.

The Nominating Committee does not currently have any formal minimum qualification requirements that must be met by a nominee to serve as a member of the Board. The Nominating Committee will take into account all factors it considers appropriate, which may include experience, accomplishments, education, understanding of the business and the industries in which we operate, specific skills, general business acumen and the highest personal and professional integrity. The Nominating Committee generally seeks individuals with broad experience at the policy-making level in business, or with particular industry expertise. While we do not have a formal diversity policy for Board membership, we look for potential candidates that help ensure that the Board has the benefit of a wide range of attributes. We believe that all of our directors should be committed to enhancing shareholder value and should have sufficient time to carry out their duties and to provide insight and practical wisdom based on experience. Each director must also represent the interests of all shareholders.

The Nominating Committee currently has no fixed process for identifying new nominees for election as a director, thereby retaining the flexibility to adapt its process to the circumstances. The Nominating Committee has the ability, if it deems it necessary or appropriate, to retain the services of an independent search firm to identify new director candidates. The Nominating Committee has determined that it will consider any potential candidate proposed by a member of our Board or senior management. Any director candidate so proposed will be personally interviewed by at least one member of the Nominating Committee and our Chief Executive Officer and their assessment of his or her qualifications will be provided to the full Nominating Committee.

Our policy and procedures regarding director candidates recommended by shareholders are contained in the Nominating Committee's charter. The Nominating Committee may consider for inclusion in its nominations for new directors any candidates recommended by shareholders, but must consider any candidate for director recommended by (i) any shareholder beneficially owning more than 5% of our outstanding common stock for at least one year as of the date the recommendation was made or (ii) a group of shareholders that beneficially owned, in the aggregate, more than 5% of our outstanding common stock, with each of the shares used to calculate that ownership held for at least one year as of the date the recommendation was made. The Nominating Committee will consider the candidate based on the same criteria established for selection of director nominees generally. The Nominating Committee reserves the right to reject any candidate in its discretion, including, without limitation, rejection of a candidate who has a special interest agenda other than the best interests of the Company and the shareholders, generally.

Science and Technology Committee. The responsibility of Science and Technology Committee is to periodically examine management's strategic direction and investments in the Company's biopharmaceutical research and development and technology initiatives. The duties and responsibilities of the Science and Technology Committee are set forth in the Charter of the Science and Technology Committee. A copy of the Charter of the Science and Technology Committee is available on our

website located at www.Dyadic.com. As discussed in its charter, among other things, the duties and responsibilities of the Science and Technology Committee are following:

- Review, evaluate and report to the Board regarding the performance of the Vice-President, Research and Development (and, his or her team), the contract research organizations being considered or working on behalf of the Company in achieving the strategic goals and objectives and the quality and direction of the Company's biopharmaceutical research and development programs.
- Identify and discuss significant emerging science and technology issues and trends.
- Review the Company's approaches to acquiring and maintaining a range of distinct technology positions (including but not limited to contracts, grants, collaborative efforts, alliances and capital investments).
- Evaluate the soundness/risks associated with the technologies in which the Company is investing its research and development efforts.
- Periodically review the Company's overall patent strategies.

Code of Conduct and Ethics

We have adopted a Code of Conduct and Ethics, as amended, that applies to all employees, key consultants, officers, and directors of our company, including our principal executive officer, principal financial officer and principal accounting officer, or persons performing similar functions. Our Code of Conduct and Ethics is available on the "Corporate Governance" page of the "Investors" section of our website at www.dyadic.com. A copy of our Code of Conduct and Ethics can also be obtained free of charge by contacting our Secretary, c/o Dyadic International, Inc, 140 Intracoastal Pointe Drive, Suite 404, Jupiter, FL 33477. We intend to satisfy the disclosure requirement under Item 5.05 of Form 8-K regarding any amendment to, or waiver from, a provision of our Code of Conduct and Ethics by posting such information on our website.

Item 11. Executive Compensation

Philosophy and Objectives

The philosophy underlying our executive compensation program is to provide an attractive, flexible and market-based total compensation program tied to performance and aligned with the interests of our shareholders. Our objective is to recruit and retain the caliber of executive officers and other key employees necessary to deliver sustained high performance to our shareholders, customers, and communities where we have a strong presence. Our executive compensation program is an important component of these overall human resources policies. Equally important, we view compensation practices as a means for communicating our goals and standards of conduct and performance and for motivating and rewarding employees in relation to their achievements. The organization's executive compensation program is designed to:

- Encourage the attraction and retention of high-caliber executives.
- Provide a competitive total compensation package, including benefits.
- Reinforce the goals of the organization by supporting teamwork and collaboration.
- Ensure that pay is perceived to be fair and equitable.
- Be flexible to potentially reward individual accomplishments as well as organizational success.
- Ensure that the program is easy to explain, understand, and administer.
- Balance the needs of the both the Company and employees to be competitive with the limits of available financial resources.
- Ensure that the program complies with state and federal legislation.

From time to time, the Company will consult with a compensation specialist to determine whether its overall compensation practices and policies are appropriate for the specific market conditions for the Company and the industries in which it operates.

Summary Compensation Table

The following table summarizes the compensation paid or accrued to our "named executive officers" (as defined by the SEC's disclosure requirements) during the fiscal years 2019 and 2018:

Name and Principal Position	Year	Salary ($)	Bonus ($)(1)	Stock Awards ($)	Option Awards ($)(2)(3)	Nonequity incentive plan compensation ($)	Nonqualified deferred compensation earnings ($)	All other payments ($) (4)	Total ($)
Mark A. Emalfarb (*)	2019	$ 440,000	$ 250,000	$ —	$ 156,000	$ —	$ —	$ 228,049	$ 1,074,049
President, CEO and Director	2018	$ 393,012	$ 200,000	$ —	$ 99,900	$ —	$ —	$ 468,891	$ 1,161,803
Ping W. Rawson (5)	2019	$ 220,000	$ 56,250	$ —	$ 114,250	$ —	$ —	$ 8,807	$ 399,307
Chief Financial Officer	2018	$ 199,755	$ —	$ —	$ 34,600	$ —	$ —	$ 7,996	$ 242,351
Ronen Tchelet, Ph.D. (6)	2019	$ 207,647	$ 41,193	$ —	$ 57,000	$ —	$ —	$ —	$ 305,840
VP of Research and Business Development	2018	$ 212,320	$ —	$ —	$ 23,400	$ —	$ —	$ 11,759	$ 247,479
Matthew S. Jones (7)	2019	$ 269,450	$ 82,954	$ —	$ 57,000	$ —	$ —	$ —	$ 409,404
Managing Dir. of Bus. Dev and Licensing	2018	$ 273,058	$ —	$ —	$ 40,000	$ —	$ —	$ —	$ 313,058

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Notes:

(*) Mr. Emalfarb also serves on the Board, for which he receives no direct, indirect or incremental compensation.

(1) All 2019 bonuses were accrued at December 31, 2019 and paid in January 2020. Mr. Emalfarb's 2018 bonus was accrued at December 31, 2018 and paid in January 2019.

(2) The Option Awards amount reported in this column represented stock options granted in 2018 and 2019 (including annual share-based compensation awards for all named executives, and Ms. Rawson's awards upon promotions for 2019 and 2018 in the amount of $55,250 and $22,000, respectively), vesting upon grant, or the one or four-year anniversary in accordance with their individual employment agreement or consulting agreement.

(3) The Option Awards amount reported in this column represented the grant date fair market value of each option granted, computed in accordance with FASB ASC Topic 718. These amounts do not correspond to the actual value that will be recognized by the named executive officers. The assumptions used in the valuation of these awards are consistent with the valuation methodologies specified in the notes to our consolidated financial statements. The table above does not include the value of the following performance-based vesting stock options, as the achievement of the conditions was not deemed probable at the grant date and the value of the awards was deemed zero in accordance with ASC 718.

- Upon the Company's uplisting to the NASDAQ in April 2019, 400,000 shares of performance-based vesting stock options granted to Mr. Emalfarb in 2016 became vested, and the related estimated value of the awards at the grant date in the amount of $392,000 was recorded in 2019 in accordance with FASB ASC Topic 718.
- Upon the achievements of different conditions in 2019, 175,000 shares of performance-based vesting stock options granted to Ms. Rawson in 2018 became vested, and the related estimated value of the awards at the grant date in the amount of $91,250 was recorded in 2019 in accordance with FASB ASC Topic 718.

(4) Other payments includes following:

- Mr. Emalfarb received $12,891 for car allowance in both years. The Company's contribution to the 401(k) retirement plan were $11,200 and $11,000 for 2019 and 2018, respectively. He also received $204,000 and $445,000 for installment payments relating to his prior employment agreement for 2019 and 2018, respectively.
- Ms. Rawson received $8,807 and $7,996 for the Company's contribution to the 401(k) retirement plan in 2019 and 2018, respectively.
- Mr. Tchelet received $11,759 for sales commission earned in 2018.

(5) Ms. Rawson was promoted to Chief Financial Officer in June 2019, and she previously served as the Company's Chief Accounting Officer since March 2018. Prior to that, Ms. Rawson was the Company's Director of Financial Reporting.

(6) The amounts represent the compensation for services of Mr. Tchelet for the year ended December 31, 2018 and 2019, in accordance with the Sky Blue Biotech Agreement indicated below.

(7) The amounts represent the compensation for services of Mr. Jones for the year ended December 31, 2018 and 2019, in accordance with the Jones Consultant Agreement indicated below.

Employment Arrangements

During 2019, the Company had employment arrangements with certain of its named executive officers, each of which is described below.

Mark A. Emalfarb

On June 21, 2016, the Company entered into an employment agreement (the "Emalfarb Agreement") with Mr. Emalfarb. The Emalfarb Agreement has an initial term of three years and automatic renewals of two years at the end of each term, unless either party provides a notice of nonrenewal, and provides that Mr. Emalfarb be employed as our President and Chief Executive Officer and that we will cause Mr. Emalfarb to be elected as a member of the Board. The material terms of the Emalfarb Agreement are summarized below:

Base Salary and Bonus. The Emalfarb Agreement provided for an annual base salary of $375,000, which was increased to $405,000 in January 2019, to $475,000 in June 2019, and to $500,000 in January 2020, in recognition of his successful efforts in every area of the business in 2018 and 2019. The Emalfarb Agreement also provided for an annual bonus award, with the timing and amount of any such bonus determined in the sole discretion of the Compensation Committee of the Board, who determined to award Mr. Emalfarb a cash bonus of $200,000 for 2018 and $250,000 for 2019.

Performance Stock Options. The Emalfarb Agreement provided Mr. Emalfarb the opportunity to be awarded annual stock option grants, each such annual option incentive stock option grant will be to purchase up to three hundred thousand (300,000) shares of common stock (the "Maximum Option Bonus") based on performance achievements. Performance incentives will be based solely on the Compensation Committee's evaluation of Mr. Emalfarb's performance during that time period.

For fiscal years 2019 and 2018, Mr. Emalfarb received a stock option grant to purchase 300,000 shares of common stock for his annual performance, representing 100% of the Maximum Option Bonus. All options granted to Mr. Emalfarb for fiscal year 2018 vested immediately upon grant and have a five-year term from the date of grant. All options granted to Mr. Emalfarb for fiscal year 2019 vest annually in equal installments over four years and have a ten-year term from the date of grant.

Stock Exchange Stock Option. In addition, Mr. Emalfarb received a stock option grant to purchase up to four hundred thousand (400,000) shares of common stock at an exercise price of $1.67, equal to the closing price of Dyadic common stock on June 21, 2016. The stock option would vest and become exercisable only if the Company's shares of common stock commence trading on the NASDAQ Capital Markets or other stock exchange approved by the Board. The Stock Exchange stock option grant has a five-year term. All 400,000 stock options granted to Mr. Emalfarb in 2016 became vested, upon the Company's uplisting to the NASDAQ in April 2019.

Licensing/Collaboration Transaction Stock Options. A stock option to purchase up to six hundred thousand (600,000) shares of common stock shall be proportionally awarded, vest and become exercisable when each of three (3) Bona Fide Licensing / Collaboration Transactions are entered into with the Company. A Bona Fide transaction is defined as a license, joint venture or other collaboration for a specific biologic with the intent to commercialize and/or a license agreement that generates a cumulative five million dollars in non-refundable cash, or when either the vaccine or biologics pharmaceutical business categories are sold. On November 12, 2019, the Company entered into an amendment (the "Amendment") to the Emalfarb Agreement. Pursuant to the Amendment, the stock options to be awarded to Mr. Emalfarb upon the Company entering into a first or second licensing and/or collaboration transaction, as provided in the Emalfarb Agreement, shall each be awarded on the date of the relevant licensing and/or collaboration transaction and shall each have a fixed exercise date on the tenth anniversary of the date of grant.

Severance Terms. Mr. Emalfarb will be eligible for severance benefits comparable to other executives at his level. In addition, if Mr. Emalfarb's employment is terminated by the Company without cause, by Mr. Emalfarb for good reason, or due to Mr. Emalfarb's death or disability, then the Company shall fulfill its obligations as for annual base salary through the effective date of termination and he will be entitled to receive his accrued but unpaid vacation through the date thereof plus, in the sole discretion of the Compensation Committee, the Maximum Option Bonus and performance incentive may be awarded. In addition, all of Mr. Emalfarb's unvested Stock Exchange Stock Options and Licensing/Collaboration Transaction Stock Options will vest immediately in the event milestones for which the options would have been awarded are achieved within one year from the date of termination or upon a change of control.

Change of Control. In the sole discretion of the Compensation Committee, Mr. Emalfarb may be awarded an additional bonus on or before the occurrence of a change of control.

Side Letter. In connection with the execution of the Emalfarb Agreement, the Company and Mr. Emalfarb entered into a separate agreement (the "Side Letter") under which the Company agreed to pay Mr. Emalfarb in monthly installments over the initial term of the Emalfarb Agreement, $1,335,000, equal to the amount of the severance payments that would have been payable under his previous employment agreement if Mr. Emalfarb resigned for "good reason" in connection with a change in control. All payments under this Side Letter have been made, and the Company has no additional obligation associated with this Side Letter as of June 2019.

Ping W. Rawson

In connection with Ping Rawson's appointment as the Company's Chief Financial Officer in June 2019, the Board approved her base salary at $225,000 per year, which was increased to $231,750 per year in January 2020, which increase was consistent with annual increases for the majority of the Company's employees. Ms. Rawson will also receive discretionary annual cash bonuses and other equity compensation as determined by the Company.

For fiscal year 2019, Ms. Rawson received stock option grants to purchase 100,000 shares of common stock for her annual performance in January 2019 and additional 25,000 options associated with her promotion to the CFO in June 2019. Ms. Rawson also received a cash bonus of $56,250 based on her annual performance.

In connection with Ms. Rawson's appointment as the Company's Accounting Officer in March 2018, the Company granted Ms. Rawson a sign-on award of 50,000 stock options that will vest annually in equal installments over four years, and a conditional award of 50,000 stock options that would vest upon the Company's becoming an SEC reporting entity. In November 2018, the Company granted Ms. Rawson a special performance-based award of 125,000 options, which would vest upon the Company's successful uplisting to the NASDAQ or a national stock exchange. Ms. Rawson will be eligible for twelve (12) months of severance benefits, if her services are no longer required due to a change of control or any reason other than for cause. A total of 175,000 of the options vested upon the Company becoming an SEC reporting entity and listing on the NASDAQ in 2019.

Ronen Tchelet, Ph.D.

We entered into a consulting agreement with Sky Blue Biotech kft, dated January 1, 2016 (the "Sky Blue Biotech Agreement"), to engage Mr. Tchelet to serve as our Vice President of Research and Business Development. The engagement term of the Sky Blue Biotech Agreement is one year and will renew annually on the anniversary date of the agreement, unless the Company or Mr. Tchelet provides notice of non-renewal any time after the one year anniversary date with not less than 90 days' notice. Mr. Tchelet is subject to an annual performance evaluation and adjustment of his base consulting fees, in the sole discretion of the Company. Mr. Tchelet was compensated EUR €180,000 per annum in 2018 for the consulting services provided, which was increased to EUR €185,400 per annum in January 2019, and to EUR €190,962 in January 2020, which increase was consistent with annual increases for the majority of the Company's employees.

Mr. Tchelet is also eligible for a discretionary annual target bonus of up to 40% of his base contract amount if specific performance targets are met. For fiscal year 2019, Mr. Tchelet received a cash bonus of EUR €37,080. For fiscal years 2019 and 2018, Mr. Tchelet received stock option grants to purchase 75,000 and 100,000 shares of common stock for his annual performance, respectively. All options granted to Mr. Tchelet for fiscal years 2019 and 2018 vest upon the one-year anniversary and have a ten-year term from the date of grant.

During the engagement period, Mr. Tchelet shall be entitled to reimbursement of all business travel, entertainment and other business expenses reasonably incurred in the performance of his duties for the Company. Additionally, if the Company enters into a licensing agreement or research and development agreement sourced and developed by Mr. Tchelet during the engagement period, Mr. Tchelet shall receive the following: (i) a commission of up to 1% of the up-front licensing revenue and (ii) a commission of up to 2.5% of the research and development revenue. Commissions will be paid quarterly within 30 days of the Company's receipt of payment.

Mr. Tchelet is subject to certain restrictive covenants, including Company ownership of Mr. Tchelet's work product which shall remain the sole and exclusive property of the Company, non-disclosure for five years following the date of execution of the agreement or for three years following the termination of agreement whichever is last to occur, and non-solicitation for five years following the termination of the Sky Blue Biotech Agreement.

Matthew S. Jones

We entered into a consulting agreement with Novaro Ltd. dated March 31, 2017 (the "Jones Consultant Agreement") to engage Mr. Jones as our Managing Director Business Development and Licensing. The engagement term of the Jones Consultant Agreement is one year and will renew annually on the anniversary date of the agreement, unless the Company or Novaro Ltd. provides notice of non-renewal any time after the first annual anniversary date with then not less than 90 days' notice. Mr. Jones is subject to an annual performance evaluation and adjustment of his base consulting fees, in the sole discretion of the Company. Mr. Jones was compensated £203,528 per annum in 2018 for the consulting services provided, which was increased to £209,634 per annum in January 2019, and to £215,923 in January 2020, which increase was consistent with annual increases for the majority of the Company's employees.

Mr. Jones is also eligible for a discretionary annual target bonus of up to 40% of the base contract value if specific performance targets are met as specified in the Jones Consultant Agreement. For fiscal year 2019, Mr. Jones received a cash bonus of £62,890. For fiscal years 2019 and 2018, Mr. Jones received stock option grants to purchase 50,000 and 100,000 shares of common stock for his annual performance, respectively. In March 2018, the Company granted Mr. Jones a special award of 50,000 stock options in recognition of his achievements in business development. All options granted to Mr. Jones during fiscal years 2019 and 2018 vest upon the one-year anniversary and have a ten-year term from the date of grant.

During the engagement period, Mr. Jones shall be entitled to reimbursement of all business travel, entertainment and other business expenses reasonably incurred in the performance of his duties on behalf of the Company. Mr. Jones is subject to certain restrictive covenants, including Company ownership of Mr. Jones' work product which shall remain the sole and exclusive property of the Company, non-disclosure for five years following the date of execution of the agreement or for three years following the termination of agreement whichever is last to occur, and non-solicitation for five years following the termination of agreement.

Outstanding Equity Awards at Fiscal Year-End

The following table summarizes the outstanding equity award holdings held by our "named executive officers" (as defined by the SEC's disclosure requirements) at December 31, 2019.

		Option Awards					Stock Awards			
Name		Number of Securities Underlying Unexercised Options (#) exercisable	Number of Securities Underlying Unexercised Options (#) unexercisable	Equity Incentive Plan Awards: Number of Securities Underlying Unexercised Unearned Options (#)	Option Exercise Price ($)	Option Expiration Date	Number of Shares or Units of Stock That Have Not Vested (#)	Market Value of Shares or Units of Stock That Have Not Vested ($)	Equity Incentive Plan Awards: Number of Unearned Shares, Units or Other Rights That Have Not Vested (#)	Equity Incentive Plan Awards: Market or Payout Value of Unearned Shares, Units or Other Rights That Have Not Vested ($)
Mark A. Emalfarb		100,000	—	—	1.67	6/20/2021	—	—	—	—
		400,000	—	—	1.67	6/20/2021	—	—	—	—
		150,000	—	—	1.63	1/3/2022	—	—	—	—
		270,000	—	—	1.39	1/2/2023	—	—	—	—
		300,000	—	—	1.87	1/2/2024	—	—	—	—
Ping W. Rawson	(1)	18,750	6,250	—	1.62	6/26/2026	—	—	—	—
	(1)	5,945	5,945	—	1.63	1/3/2027	—	—	—	—
	(1)	7,500	22,500	—	1.39	1/2/2028	—	—	—	—
		50,000	—	—	1.44	3/19/2028	—	—	—	—
	(1)	12,500	37,500	—	1.44	3/19/2028	—	—	—	—
		125,000	—	—	1.76	11/16/2028	—	—	—	—
	(1)	—	100,000	—	1.87	1/2/2029	—	—	—	—
		25,000	—	—	6.26	6/28/2029	—	—	—	—
Ronen Tchelet, Ph.D.	(1)	150,000	50,000	—	1.57	1/18/2026	—	—	—	—
		50,000	—	—	1.63	1/3/2027	—	—	—	—
		60,000	—	—	1.39	1/2/2028	—	—	—	—
	(2)	—	100,000		1.87	1/2/2029	—	—	—	—
Matthew S. Jones		40,000	—	—	1.63	1/3/2027	—	—	—	—
		50,000	—	—	1.39	1/2/2028	—	—	—	—
		50,000	—	—	1.44	3/19/2028	—	—	—	—
	(2)	—	100,000		1.87	1/2/2029	—	—	—	—

Notes:
(1) The options vest annually in equal installments over four years subsequent to the grant date.
(2) The options will vest upon the one-year anniversary subsequent to the grant date.

Pension Benefits

The Company has a 401(k) defined contribution plan (the "401(k) Plan") in place, under which participants may elect to defer up to 100% of their compensation up to a maximum amount determined annually pursuant to Internal Revenue Service regulations. Employee contributions may begin 90 days after the date of hire and are immediately vested. The 401(k) Plan provides a safe harbor basic match contribution for all eligible employees who make salary deferrals. The match contribution is equal to 100% of the employee's salary deferral up to 4% of such employee's annual deferred compensation. This match contribution is credited to the employee's account and is 100% vested at the time of contribution.

Director Compensation

The following table sets forth the total compensation for our non-employee directors for the year ended December 31, 2019:

Name	Fees earned or paid in cash [1]	Stock awards ($)	Options awards ($) [1][2][3]	Non-equity incentive plan compensation ($)	Nonqualified deferred compensation earnings ($)	All other compensation ($)	Total ($)
Michael P. Tarnok	$ 73,500	$ —	$ 80,500	$ —	$ —	$ —	$ 154,000
Jack L. Kaye[4]	$ 72,300	$ —	$ 94,000	$ —	$ —	$ —	$ 166,300
Seth J. Herbst, MD	$ 60,000	$ —	$ 27,000	$ —	$ —	$ —	$ 87,000
Arindam Bose, Ph.D.[4]	$ 67,500	$ —	$ 94,000	$ —	$ —	$ —	$ 161,500
Barry C. Buckland, Ph.D.	$ 60,000	$ —	$ 27,000	$ —	$ —	$ —	$ 87,000

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Notes:

[1] Directors who are also employees or officers of the Company or any of its subsidiaries do not receive any separate compensation as a director. Non-employee directors receive an annual retainer for Board service of $60,000, paid in equal monthly installments. The annual stock option award for non-employee directors is 50,000 options. Prior to June 25, 2019, a director who served as Chairman of the Board also received an additional annual retainer of $12,000 paid in equal monthly installments and a director who served as Chair of the Audit Committee also received an additional annual retainer of $9,600 paid in equal monthly installments. All options granted to directors prior to June 25, 2019 vest 25% upon grant and the remaining 75% will vest annually in equal installments over four years. Effective June 25, 2019, the following changes were made: (1) a director who serves as Chairman of the Board, Chair of the Audit Committee, and Chair of the Science and Technology Committee shall each receive an additional annual retainer of $15,000 and 25,000 stock options, and (2) all options granted to directors will vest upon the one-year anniversary subsequent to the grant date. Accordingly, additional 25,000 options were granted to Mr. Tarnok, Mr. Kaye and Dr. Bose on June 25, 2019, and monthly installments based on the new annual retainer rate were applied starting from July 2019.

[2] The Stock Option Awards represented the grant date fair market value of each option granted in 2019, computed in accordance with FASB ASC Topic 718. These amounts do not correspond to the actual value that will be recognized by the named directors. The assumptions used in the valuation of these awards are consistent with the valuation methodologies specified in the notes to our consolidated financial statements.

[3] Options to purchase 280,000 shares (Mr. Tarnok), 280,000 shares (Mr. Kaye), 350,000 shares (Mr. Herbst), 280,000 shares (Mr. Bose), and 85,000 shares (Mr. Buckland) were outstanding at December 31, 2019.

[4] In January 2019, the following special awards were granted: (1) additional 25,000 options were granted to Mr. Kaye in recognition of the level of effort required of him in his role as the Chair of the Audit Committee and member of the Compensation Committee, and (2) additional 25,000 options were granted to Dr. Bose in recognition of his contributions to the Company's R&D strategies and accomplishments.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

The following table sets forth certain information regarding the beneficial ownership of our common stock as of December 31, 2019 (except as noted below), by:

- each person known by us to be the beneficial owner of more than 5% of the outstanding shares of our common stock;
- each of our directors, named executive officers; and
- all of our directors and executive officers as a group.

The amounts and percentages of common stock beneficially owned are reported on the basis of regulations of the SEC governing the determination of beneficial ownership of securities. Under the rules of the SEC, a person is deemed to be a "beneficial owner" of a security if that person has or shares voting power, which includes the power to vote or direct the voting of a security, or investment power, which includes the power to dispose of or to direct the disposition of a security. A person is also deemed to be a beneficial owner of any securities of which that person has a right to acquire beneficial ownership within sixty (60) days of December 31, 2019. Securities that can be so acquired are deemed to be outstanding for purposes of computing such person's ownership percentage, but not for purposes of computing any other person's percentage. Under these rules, more than one person may be deemed a beneficial owner of the same securities and a person may be deemed to be a

beneficial owner of securities as to which such person has no economic interest. Except as otherwise indicated in these footnotes, each of the beneficial owners listed has, to our knowledge, sole voting and investment power with respect to the indicated shares of common stock.

As of December 31, 2019, the Company has 39,612,659 shares of common stock issued and 27,359,157 shares of common stock outstanding with the remaining 12,253,502 shares held in treasury. The beneficial ownership table below includes those shares of common stock underlying options that are currently exercisable or exercisable within sixty (60) days of December 31, 2019, but excludes those shares issued or repurchased subsequent to December 31, 2019:

Name and Address of Beneficial Owner [1]	Number of Common Shares Held	Options Exercisable within 60 Days	Number of Common Share Equivalents Beneficially Owned	Percentage of Common Share Equivalents Beneficially Owned (%) [2]
5% Shareholders:				
Mark A. Emalfarb [3]	4,166,987	1,220,000	5,386,987	18.8%
The Francisco Trust U/A/D February 28, 1996 [4]	3,781,849	—	3,781,849	13.8%
Named Executive Officers and Directors:				
Mark A. Emalfarb [3]	4,166,987	1,220,000	5,386,987	18.8%
Michael P. Tarnok	188,929	194,063	382,992	1.4%
Jack L. Kaye	72,707	180,001	252,708	*
Seth J, Herbst, M.D.	30,000	289,063	319,063	1.2%
Arindam Bose, Ph.D.	—	160,313	160,313	*
Barry C. Buckland, Ph.D.	—	38,125	38,125	*
Ping W. Rawson	18,500	280,168	298,668	1.1%
Ronen Tchelet, Ph.D.	—	410,000	410,000	1.5%
Matthew S. Jones	—	240,000	240,000	*
All current executive officers and directors as a group (9 persons)	4,477,123	3,011,733	7,488,856	24.7%

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Notes:

(*) Less than 1%

(1) Except as otherwise noted, the address for each shareholder is c/o Dyadic International, Inc., 140 Intracoastal Pointe Drive, Suite 404, Jupiter, FL 33477.

(2) Based on 27,359,157 shares of common stock outstanding as of December 31, 2019. Shares of common stock subject to options that are currently exercisable or exercisable within 60 days are deemed outstanding for purposes of computing the percentage of the person holding such options but are not deemed outstanding for purposes of computing the percentage of any other person.

(3) Includes 4,166,987 shares held by Mark A. Emalfarb beneficially through the MAE Trust U/A/D October 1, 1987, of which Mr. Emalfarb is the sole beneficiary and serves as sole trustee. In addition, Mr. Emalfarb holds 1,220,000 shares of common stock underlying options that are presently exercisable. Based on the information available to us, the address of the MAE Trust U/A/D October 1, 1987 is 193 Spyglass Court, Jupiter, 33477.

(4) The trustee of the Francisco Trust is Adam Morgan, and the beneficiaries thereof are the spouse and descendants of Mark A. Emalfarb. The address of the Francisco Trust is 3128 San Michele Drive, Palm Beach Gardens, Florida 33418. Mr. Emalfarb disclaims beneficial ownership of such shares.

Equity Compensation Plan Information

The 2011 Equity Incentive Plan (the “2011 Plan”) was adopted by the Board on April 28, 2011 and approved by the Company’s stockholders on June 15, 2011. The 2011 Plan serves as the successor to the Company’s 2006 Stock Option Plan (the “2006 Plan”). Since the effective date of the 2011 Plan, all future equity awards were made from the 2011 Plan, and no additional awards will be granted under the 2006 plan. Under the 2011 Plan, 3,000,000 shares of the Company’s common stock

were initially reserved for issuance pursuant to a variety of share-based compensation awards, plus any shares available for issuance under the 2006 Plan or are subject to awards under the 2006 Plan which are forfeited or lapse unexercised and which following the effective date are not issued under the 2006 Plan. In accordance with the provision of the 2011 Plan, the Board approved an increase of 1,500,000 shares each year to the plan on January 1, 2019 and 2020.

The following table summarizes information about our equity compensation plans as of December 31, 2019:

Plan Category	Number of Securities to be Issued Upon Exercise of Outstanding Options, Warrants and Rights(a) [1]	Weighted-Average Exercise Price of Outstanding Options, Warrants and Rights (b)	Number of Securities Remaining Available for Future Issuance Under Equity Compensation Plans (Excluding Securities Reflected in Column (a)) (c)
Equity compensation plans approved by security holders	3,860,390	$1.76	1,547,211

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Note:

[1] Includes options only.

Item 13. Certain Relationships and Related Transactions, and Director Independence

One of our principal stockholders, the Francisco Trust, which owns 13.8% of our common stock, is administered by Mr. Adam Morgan as trustee. The beneficiaries of the Francisco Trust are the descendants and spouse of Mr. Emalfarb. Apart from these relationships, there are no family relationships among or between our officers, directors and beneficial owners of more than five percent (5%) of our common stock. In accordance with a divorce decree dated March 18, 2014, Lisa K Emalfarb, the former spouse of Mr. Emalfarb, is no longer a beneficiary of the Francisco Trust.

Stock Options Granted to Executive Officers and Directors

We have granted stock options to our executive officers and directors, as more fully described in the section above entitled “Executive Compensation”.

Indemnification Agreements

We have entered, and intend to continue to enter, into separate indemnification agreements with each of our directors and executive officers.

Related Party Transactions Policy

Our Audit Committee charter requires that our Board review and approve, if the duty is not delegated to a comparable body of the Board, all related party transactions in accordance with the regulations of the SEC.

Independence of Directors

In evaluating the independence of its members and the composition of the committees of the Board, the Board utilizes the definition of independence as that term is defined under the published listing requirements of NASDAQ. The NASDAQ independence definition includes a series of objective tests. For example, an independent director may not be employed by us and may not engage in certain types of business dealings with the Company. In addition, as further required by NASDAQ rules, the Board has made a subjective determination as to each independent director that no relation exists which, in the opinion of the Board, would interfere with the exercise of independent judgment in carrying out the responsibilities of a director. In making these determinations, the Board reviewed and discussed information provided by the directors and by the Company with regard to each director’s business and personal activities as they may relate to the Company and the Company’s management. We believe that Drs. Herbst, Bose and Buckland, as well as Messrs. Kaye and Tarnok qualify as independent directors. In addition, our Board has determined that each member of our Audit Committee is independent and is otherwise qualified to be a member of the Audit Committee in accordance with the rules of the SEC and NASDAQ.

Item 14. Principal Accounting Fees and Services

In connection with the audit of our 2019 and 2018 consolidated financial statements, we entered into engagement letters with Mayer Hoffman McCann P.C.("MHM") which set forth the terms by which MHM agreed to perform audit services for us.

The following table presents fees billed, by our independent registered public accounting firm for professional services, in the years indicated, by category, as described in the notes to the table.

	Years Ended December 31,	
	2019	2018
Audit fees [1]	$ 138,700	$ 146,000
Audit-related fees [2]	11,000	25,500
Tax fees [3]	13,500	42,900
Total fees	$ 163,200	$ 214,400

Notes:
[1] Audit fees consist of fees billed for professional services by MHM for audit and quarterly review of our financial statements or services that are normally provided by the accountant in connection with statutory and regulatory filing or engagement for those years related to our periodic and current OTC Markets (2018), NASDAQ Capital Markets (2019), and SEC filings and registration statements.
[2] Audit-related fees consist of fees billed for procedures performed by MHM in connection with the filing of registration statements on Form 10-12G and Form 10-12G/A.
[3] Tax fees consist of fees billed for tax professional services by MHM with respect to the IRS audit and by an affiliate of MHM for the Netherlands subsidiary.

Report of Audit Committee

Our Audit Committee's policy is to pre-approve all audit and permissible non-audit services provided by our independent auditors. These services may include audit services, audit-related services, tax services and other services. Pre-approval is generally provided for up to one year and any pre-approval is detailed as to the particular service or category of services. The independent auditor and management are required to periodically report to the Audit Committee regarding the extent of services provided by the independent auditor in accordance with this pre-approval. Any proposed services not included within the list of pre-approved services or any proposed services that will cause the Company to exceed the pre-approved aggregate amount requires specific pre-approval by the Audit Committee. All audit fees, audit-related fees, tax fees, and other fees listed in the table above were approved by the Audit Committee pursuant to its pre-approval policies and procedures.

PART IV

Item 15. Financial Statement and Exhibits

(a) Financial Statement

Our financial statements and related notes thereto are listed and included in this Annual Report on Form 10-K beginning on page F-1.

(b) Exhibits

		Incorporated by Reference			
Exhibit No.	Description of Exhibit	Form	Original No.	Date Filed	Filed Herewith
2.1*#	Investment Shareholders Agreement with respect to Biotechnology Developments for Industry, S.L. and VLP The Vaccines Company, S.L.U. dated June 30, 2017	10-12G	2.1	January 14, 2019	

3.1#	Restated Certificate of Incorporation dated November 1, 2004	10-12G	3.1	January 14, 2019	
3.2#	Second Amended and Restated Bylaws dated December 13, 2018	10-12G	3.2	January 14, 2019	
4.1#	Specimen Stock Certificate Evidencing Shares of Common Stock	10-12G	4.1	January 14, 2019	
4.2	Description of Securities				x
10.1**#	Dyadic International, Inc. 2006 Stock Option Plan	10-12G	10.1	January 14, 2019	
10.2**#	Dyadic International, Inc. 2011 Equity Incentive Plan	10-12G	10.2	January 14, 2019	
10.3**#	Form of Restricted Stock Unit Agreement Pursuant to the Dyadic International, Inc. 2011 Equity Incentive Plan	10-12G	10.3	January 14, 2019	
10.4**#	Form of Stock Option Agreement Pursuant to the Dyadic International, Inc. 2011 Equity Incentive Plan	10-12G	10.4	January 14, 2019	
10.5**#	Employment Agreement, dated June 16, 2016, and First Amendment dated January 23, 2017, by and between Dyadic International, Inc. and Mark A. Emalfarb	10-12G	10.5	January 14, 2019	
10.5.1**#	Second Amendment to Employment Agreement between Dyadic International, Inc. and Mark A. Emalfarb, dated as of November 12, 2019	8-K	10.1	November 13, 2019	
10.7**#	Consulting Agreement, dated January 1, 2016, by and between Dyadic Netherlands B.V. and Sky Blue Biotech kft on behalf of Ronen Tchelet	10-12G	10.7	January 14, 2019	
10.8**#	Consulting Agreement, dated March 13, 2017, by and between Dyadic International, Inc. and Novaro Ltd. on behalf of Matthew Jones	10-12G	10.8	January 14, 2019	
10.9**#	Compensation Letter, dated March 26, 2018, by and between Dyadic International, Inc. and Ping W. Rawson	10-12G	10.9	January 14, 2019	
10.10#	Form of Director and Officer Indemnification Agreement	10-12G	10.10	January 14, 2019	
10.11#	Intracoastal Pointe Office Building Lease Agreement by and between Dyadic International, Inc. and Quentin Partners Co. dated December 30, 2010 and Renewal of Lease dated June 21, 2019				x
10.12†#	Pharma License Agreement with Danisco US, Inc. dated December 31, 2015	10-12G	10.12	January 14, 2019	
10.13†#	Commission Contract with VTT Technical Research Centre of Finland Ltd dated September 2, 2016	10-12G	10.13	January 14, 2019	
10.13.1†#	Commission Contract with VTT Technical Research Centre of Finland Ltd dated June 28, 2019	8-K	10.1	July 5, 2019	
10.14†#	Research Services Agreement with Biotechnology Developments for Industry in Pharmaceuticals, S.L.U. dated June 30, 2017	10-12G	10.14	January 14, 2019	
10.15†#	Service Framework Agreement with Biotechnology Developments for Industry in Pharmaceuticals, S.L.U. dated June 30, 2017	10-12G	10.15	January 14, 2019	
10.16†#	Feasibility Study Agreement with Sanofi-Aventis Deutschland GmbH dated September 7, 2018	10-12G	10.16	January 14, 2019	
10.17†#	License Agreement with VTT Technical Research Centre of Finland Ltd dated July 17, 2017	10-12G	10.17	January 14, 2019	
10.18†#	Research and Commercialization Collaboration Agreement with Serum Institute of India Pvt. Ltd., dated May 7, 2019	8-K	10.1	May 8, 2019	
10.19†#	Non-Exclusive Sublicense Agreement among Dyadic International, Inc., Alphazyme, LLC, dated May 5, 2019	8-K	10.1	May 8, 2019	

10.20†#	Sub-License Agreement among Dyadic International (USA), Inc., Luina Bio Pty Ltd. and Novovet Pty Ltd, dated April 26, 2019	8-K	10.1	May 2, 2019	
10.20.1†#	Shareholders Agreement among Dyadic International (USA), Inc., JCL Biologics Pty Ltd and Novovet Pty Ltd, dated April 26, 2019	8-K	10.2	May 2, 2019	
14	Code of Ethics [1]				(1)
21.1#	Subsidiaries of the Registrant	10-12G	21.1	January 14, 2019	
31.1	Certification of Chief Executive Officer of Dyadic Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002				x
31.2	Certification of Chief Financial Officer of Dyadic Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002				x
32.1	Certification of Chief Executive Officer of Dyadic Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002				x
32.2	Certification of Chief Financial Officer of Dyadic Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002				x

Exhibit No.	Description
101.INS	XBRL Instance Document
101.SCH	XBRL Taxonomy Extension Schema Document
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	XBRL Taxonomy Extension Labels Linkbase Document
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document

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Notes:

* This filing excludes schedules and similar attachments pursuant to Item 601(b)(2) of Regulation S-K. A copy of any omitted schedule will be furnished supplementary to the SEC upon request; provided, however, that the parties may request confidential treatment pursuant to Rule 24b-2 of the Exchange Act for any document so furnished.

** Identifies each management contract or compensatory plan or arrangement.

† Portions of the exhibits have been omitted pursuant to a request for confidential treatment.

Previously filed with the SEC.

[1] The Company elect to satisfy Regulation S-K §229.406(c) by posting its Code of Ethics on its website at www.dyadic.com.

Item 16. Form 10-K Summary

Not applicable.

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.

DYADIC INTERNATIONAL, INC.

March 30, 2020	By:	/s/ Mark A. Emalfarb
		Mark A. Emalfarb
		President and Chief Executive Officer
		(Principal Executive Officer)
March 30, 2020	By:	/s/ Ping W. Rawson
		Ping W. Rawson
		Chief Financial Officer
		(Principal Financial Officer and Principal Accounting Officer)

Pursuant to the requirements of Securities Exchange Act of 1934, as amended, this Annual Report has been signed below by the following persons on behalf of the registrant in the capacities and on the dates indicated.

Signature	Title	Date
/s/ Mark A. Emalfarb	Chief Executive Officer, Director	March 30, 2020
Mark A. Emalfarb	(Principal Executive Officer)	
/s/ Ping W. Rawson	Chief Financial Officer	March 30, 2020
Ping W. Rawson	(Principal Financial Officer and Principal Accounting Officer)	
/s/ Michael P. Tarnok	Chairman, Director	March 30, 2020
Michael P. Tarnok		
/s/ Jack L. Kaye	Director	March 30, 2020
Jack L. Kaye		
/s/ Seth J. Herbst	Director	March 30, 2020
Seth J. Herbst, MD		
/s/Arindam Bose	Director	March 30, 2020
Arindam Bose, Ph.D.		
/s/Barry C. Buckland	Director	March 30, 2020
Barry C. Buckland, Ph.D.		

Index to Consolidated Financial Statements

13577 Feather Sound Drive, Suite 400 ■ Clearwater, Florida 33762
Main: 727.572.1400 ■ Fax: 727.571.1933 ■ www.mhm-pc.com

Report of Independent Registered Public Accounting Firm

To the Board of Directors and
Stockholders of Dyadic International, Inc.:

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Dyadic International, Inc. and Subsidiaries ("Company") as of December 31, 2019 and 2018, and the related consolidated statements of operations, stockholders' equity, and cash flows for each of the two years in the period ended December 31, 2019, 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 consolidated financial position of the Company as of December 31, 2019 and 2018, and the results of its operations and its cash flows for each of the two years in the period ended December 31, 2019, in conformity with accounting principles generally accepted in the United States of America.

Adoption of New Accounting Standards

As discussed in Note 1 to the consolidated financial statements, the Company changed its method of accounting for leases as a result of the adoption of Accounting Standards Codification Topic 842, Leases, effective January 1, 2019, under the modified retrospective transition approach.

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 audits. 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 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 consolidated financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control over financial reporting. Accordingly, we express no such opinion.

Our audits 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 audits 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 audits provide a reasonable basis for our opinion.

Mayer Hoffman McCann P.C.

We have served as the Company's auditor since 2008.

Clearwater, FL
March 30, 2020

DYADIC INTERNATIONAL, INC. AND SUBSIDIARIES

CONSOLIDATED BALANCE SHEETS

	December 31,	
	2019	**2018**
Assets		
Current assets:		
Cash and cash equivalents	$ 4,823,544	$ 2,386,314
Short-term investment securities	29,399,146	38,816,441
Interest receivable	329,711	294,240
Accounts receivable	558,530	318,744
Income tax receivable	250,308	506,866
Prepaid research and development	—	253,446
Prepaid expenses and other current assets	277,999	172,001
Total current assets	35,639,238	42,748,052
Non-current assets:		
Long-term investment securities	1,511,636	—
Long-term income tax receivable	250,308	500,616
Other assets	51,314	52,139
Total assets	$ 37,452,496	$ 43,300,807
Liabilities and stockholders' equity		
Current liabilities:		
Accounts payable	$ 943,378	$ 309,060
Accrued expenses	566,003	399,576
Deferred research and development obligations	78,644	141,002
Total current liabilities	1,588,025	849,638
Commitments and contingencies (Note 5)		
Stockholders' equity:		
Preferred stock, $.0001 par value:		
Authorized shares - 5,000,000; none issued and outstanding	—	—
Common stock, $.001 par value:		
Authorized shares - 100,000,000; issued shares - 39,612,659 and 38,966,988, outstanding shares - 27,359,157 and 26,713,486 as of December 31, 2019 and 2018, respectively	39,613	38,967
Additional paid-in capital	96,105,851	94,385,230
Treasury stock, shares held at cost - 12,253,502	(18,929,915)	(18,929,915)
Accumulated deficit	(41,351,078)	(33,043,113)
Total stockholders' equity	35,864,471	42,451,169
Total liabilities and stockholders' equity	$ 37,452,496	$ 43,300,807

The accompanying notes are an integral part of these audited consolidated financial statements

DYADIC INTERNATIONAL, INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF OPERATIONS

	Years Ended December 31,	
	2019	**2018**
Revenues:		
Research and development revenue	$ 1,681,076	$ 1,295,451
Costs and expenses:		
Costs of research and development revenue	1,459,701	1,027,278
Research and development	3,087,597	2,101,628
Research and development - related party	868,720	1,215,536
General and administrative	5,519,922	4,522,676
Foreign currency exchange loss (gain), net	27,725	20,778
Total costs and expenses	10,963,665	8,887,896
Loss from operations	(9,282,589)	(7,592,445)
Interest income	984,930	894,532
Loss before income taxes	(8,297,659)	(6,697,913)
Provision for (benefit from) income taxes	10,306	(1,006,157)
Net loss	$ (8,307,965)	$ (5,691,756)
Basic and diluted net loss per common share	$ (0.31)	$ (0.21)
Basic and diluted weighted-average common shares outstanding	27,003,695	27,673,300

The accompanying notes are an integral part of these audited consolidated financial statements

DYADIC INTERNATIONAL, INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY

	Common Stock		Treasury Stock		Additional	Accumulated	
	Shares	Amount	Shares	Amount	paid-in capital	deficit	Total
Balance at December 31, 2017	38,936,988	$ 38,937	(10,609,177)	$ (16,625,873)	$ 93,913,557	$ (27,351,357)	$ 49,975,264
Stock-based compensation	—	—	—	—	467,203	—	467,203
Exercise of stock options	30,000	30	—	—	4,470	—	4,500
Repurchases of common stock	—	—	(1,644,325)	(2,304,042)	—	—	(2,304,042)
Net loss	—	—	—	—	—	(5,691,756)	(5,691,756)
Balance at December 31, 2018	38,966,988	$ 38,967	(12,253,502)	$ (18,929,915)	$ 94,385,230	$ (33,043,113)	$ 42,451,169
Stock-based compensation	—	—	—	—	1,171,079	—	1,171,079
Exercise of stock options	645,671	646	—	—	549,542	—	550,188
Net loss	—	—	—	—	—	(8,307,965)	(8,307,965)
Balance at December 31, 2019	39,612,659	$ 39,613	(12,253,502)	$ (18,929,915)	$ 96,105,851	$ (41,351,078)	$ 35,864,471

The accompanying notes are an integral part of these audited consolidated financial statements

DYADIC INTERNATIONAL, INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF CASH FLOWS

	Years Ended December 31,	
	2019	**2018**
Cash flows from operating activities		
Net loss	$ (8,307,965)	$ (5,691,756)
Adjustments to reconcile net loss to net cash used in operating activities:		
Stock-based compensation expense	1,171,079	467,203
Amortization of held-to-maturity securities, net	198,208	676,644
Foreign currency exchange loss (gain), net	27,725	20,778
Changes in operating assets and liabilities:		
Interest receivable	(35,471)	195,601
Accounts receivable	(252,772)	(59,984)
Income tax receivable	506,866	(1,007,482)
Prepaid research and development	253,446	913,013
Prepaid expenses and other current assets	(105,707)	(17,395)
Accounts payable	657,658	(195,755)
Accrued expenses	166,399	251,617
Deferred research and development obligations	(62,358)	141,002
Income taxes payable	—	(100,675)
Net cash used in operating activities	**(5,782,892)**	**(4,407,189)**
Cash flows from investing activities		
Purchases of held-to-maturity investment securities	(47,615,550)	(49,734,681)
Proceeds from maturities of investment securities	55,323,000	53,063,000
Net cash provided by investing activities	**7,707,450**	**3,328,319**
Cash flows from financing activities		
Repurchases of common stock	—	(2,304,042)
Proceeds from exercise of options	550,188	4,500
Net cash provided by (used in) financing activities	**550,188**	**(2,299,542)**
Effect of exchange rate changes on cash	(37,516)	(21,622)
Net decrease in cash and cash equivalents	**2,437,230**	**(3,400,034)**
Cash and cash equivalents at beginning of period	2,386,314	5,786,348
Cash and cash equivalents at end of period	**$ 4,823,544**	**$ 2,386,314**
Supplemental cash flow information		
Cash received from income tax refund	$ 506,866	$ —

The accompanying notes are an integral part of these audited consolidated financial statements

Note 1: Organization and Summary of Significant Accounting Policies

Description of Business

Dyadic International, Inc. ("Dyadic", "we", "us", "our",or the "Company") is a global biotechnology platform company based in Jupiter, Florida with operations in the United States, a satellite office in the Netherlands and currently two research organizations performing services under contract to Dyadic in Finland and Spain. Over the past two decades, the Company has developed a gene expression platform for producing commercial quantities of industrial enzymes and other proteins, and has previously licensed this technology to third parties, such as Abengoa Bioenergy, BASF, Codexis and others, for use in industrial (non-pharmaceutical) applications. This technology is based on the *Thermothelomyces heterothallica* (formerly *Myceliophthora thermophila*) fungus, which the Company named C1. The C1 technology is a robust and versatile fungal expression system for the development and production of enzymes and other proteins.

On December 31, 2015, the Company sold its industrial technology business to DuPont Danisco ("DuPont"), the industrial biosciences business of DuPont (NYSE: DD) for $75 million (the "DuPont Transaction"). As part of the DuPont Transaction, Dyadic retained co-exclusive rights to the C1 technology for use in all human and animal pharmaceutical applications, and currently has the exclusive ability to enter into sub-license agreements (subject to the terms of the license and to certain exceptions). DuPont retained certain rights to utilize the C1 technology in pharmaceutical applications, including the development and production of pharmaceutical products, for which it will be required to make royalty payments to Dyadic upon commercialization. In certain circumstances, Dyadic may owe a royalty to either DuPont or certain licensors of DuPont, depending upon whether Dyadic elects to utilize certain patents either owned by DuPont or licensed in by DuPont.

After the DuPont Transaction, the Company has been focused on the biopharmaceutical industry, specifically in further improving and applying the proprietary C1 technology into a safe and efficient gene expression platform to help speed up the development, lower production costs and improve the performance of biologic vaccines and drugs at flexible commercial scales. We believe that the C1 technology could be beneficial in the development and manufacturing of human and animal vaccines and drugs, such as virus-like particles (VLPs), protein antigens, monoclonal antibodies (mAbs), Bi-Specific antibodies, Fab antibody fragments, Fc-Fusion proteins, as well as other therapeutic enzymes and proteins. The Company is aiming to develop products such as innovative vaccines and drugs, biosimilars and/or biobetters.

Effective April 17, 2019, our common stock began trading on the NASDAQ Stock Market LLC's NASDAQ Capital Market, under the symbol "DYAI". Prior to the Company's uplisting to the NASDAQ, the Company's common stock traded on the OTCQX market.

Summary of Significant Accounting Policies

Basis of Presentation

The accompanying audited consolidated financial statements include the accounts of the Company and its wholly owned subsidiaries. All significant intra-entity transactions and balances have been eliminated in consolidation. These consolidated financial statements have been prepared in conformity with U.S. generally accepted accounting principles ("GAAP").

Since concluding the DuPont Transaction, the Company has conducted business in one operating segment, which is identified by the Company based on how resources are allocated, and operating decisions are made. Management evaluates performance and allocates resources based on the Company as a whole.

Use of Estimates

The preparation of these consolidated financial statements in accordance with GAAP requires management to make estimates and judgments that affect the reported amount of assets and liabilities and related disclosure of contingent assets and liabilities at the date of our consolidated financial statements and the reported amounts of revenues and expenses during the applicable period. Actual results may differ from these estimates under different assumptions or conditions. Such differences could be material to the consolidated financial statements.

Concentrations

The Company's financial instruments that are potentially subject to concentrations of credit risk consist primarily of cash and cash equivalents, and investment securities. At times, the Company has cash, cash equivalents, and investment securities at financial institutions exceeding the Federal Depository Insurance Company ("FDIC") and the Securities Investor Protection Corporation ("SIPC") insured limit on domestic currency and the Netherlands FDIC counterpart for foreign currency. The Company only deals with reputable financial institutions and has not experienced any losses in such accounts.

For the years ended December 31, 2019 and 2018, the Company's revenue was generated from ten and six customers, respectively. At December 31, 2019 and 2018, the Company's account receivable was from five and four customers, respectively. The loss of business from one or a combination of the Company's customers could adversely affect its operations.

The Company conducts operations in the Netherlands through its foreign subsidiary and generates a portion of its revenues from customers that are located outside of the United States. As of and for the year ended December 31, 2019, the Company had four customers outside of the United Sates (i.e. European and Indian customers) that accounted for approximately 71.5% or $1,202,000 of total revenue and approximately 69.5% or $388,000 of accounts receivable. As of and for the year ended December 31, 2018, the Company only had one customer outside of the United States (i.e., European customer) that accounted for approximately 21.7% or $281,000 of total revenue and 100% of the Company's accounts receivable was from the United States.

The Company uses a few contract research organizations ("CROs") to conduct its research projects. For the years ended December 31, 2019 and 2018, one CRO accounted for approximately 86.6% and 88.4% of total research services we purchased, respectively. At December 31, 2019, approximately $ 706,000 or 74.9% of accounts payable was related to this CRO. At December 31, 2018, approximately $237,000 or 76.8% of accounts payable was to this CRO. The loss of business from this CRO or a combination of the Company's CROs could adversely affect its operations.

Cash and Cash Equivalents

We treat highly liquid investments with original maturities of three months or less when purchased as cash equivalents, including money market funds, which are unrestricted for withdrawal or use.

Investment Securities

The Company invests excess cash balances in short-term and long-term investment grade securities. Short-term investment securities mature within twelve (12) months or less, and long-term investment securities mature over twelve (12) months from the applicable reporting date. Management determines the appropriate classification of its investments at the time of purchase and reevaluates the classifications at each balance sheet date. The Company's investments in debt securities have been classified and accounted for as held-to-maturity. Held-to-maturity securities are those securities that the Company has the ability and intent to hold until maturity. Held-to-maturity securities are recorded at amortized cost, adjusted for the amortization or accretion of premiums or discounts. Premiums and discounts are amortized over the life of the related held-to-maturity security. When a debt security is purchased at a premium, both the face value of the debt and premium amount are reflected as investing outflow. Other-than-temporary impairment charges, if incurred, will be included in other income (expense).

The Company's investments in money market funds have been classified and accounted for as available-for-sale securities and presented as cash equivalents on the consolidated balance sheet. As of December 31, 2019 and 2018, all of our money market funds were invested in U.S. Government money market funds. The Company did not have any investment securities classified as trading as of December 31, 2019 and 2018.

Accounts Receivable

Accounts receivable consist of billed receivables currently due from customers and unbilled receivables. Unbilled receivables represent the excess of contract revenue (or amounts reimbursable under contracts) over billings to date. Such amounts become billable in accordance with the contract terms, which usually consider the passage of time, achievement of certain milestones or completion of the project.

Outstanding account balances are reviewed individually for collectability. The allowance for doubtful accounts is the Company's best estimate of the amount of probable credit losses in the Company's existing accounts receivable. Substantially all of our accounts receivable were current and include unbilled amounts that will be billed and collected over the next twelve (12) months. There was no allowance for doubtful accounts as of December 31, 2019 and 2018.

Accounts receivable consist of the following:

	December 31,	
	2019	2018
Billed receivable	$ 432,546	$ 193,065
Unbilled receivable	125,984	125,679
	$ 558,530	$ 318,744

Prepaid Expenses and Other Current Assets

Prepaid expenses and other current assets consist of the following:

	December 31,	
	2019	2018
Prepaid insurance	$ 173,890	$ 91,725
Prepaid expenses - various	101,221	77,249
Prepaid taxes	2,888	3,027
	$ 277,999	$ 172,001

Equity Method Investment

The Company follows Accounting Standards Codification ("ASC") Subtopic 323-10, Investments - Equity Methods and Joint Ventures, which requires the accounting for investments where the Company can exercise significant influence, but not control of a joint venture or equity investment. See Note 3 for the Company's investments recorded under the equity method of accounting.

Equity method investments are assessed for impairment whenever events or changes in circumstances indicate that the carrying amount of the investment may not be recoverable. If the decline in value is considered to be other than temporary, the investment is written down to its estimated fair value, which establishes a new cost basis in the investment.

Accounts Payable

Accounts payable consist of the following:

	December 31,	
	2019	2018
Research and development expenses	$ 766,001	$ 240,064
Legal expenses	26,994	—
Other	150,383	68,996
	$ 943,378	$ 309,060

Accrued Expenses

Accrued expenses consist of the following:

	December 31,	
	2019	2018
Employee wages and benefits	$ 474,388	$ 268,287
Research and development expenses	69,795	49,666
Other	21,820	81,623
	$ 566,003	$ 399,576

Revenue Recognition

The Company has no pharmaceutical products approved for sale at this point, and all of our revenue to date has been research revenue from third-party collaborations and government grants. The Company is expected to generate future revenue from license agreements and collaborative arrangements, which may include upfront payments for licenses or options to obtain a license, payment for research and development services and milestone payments, in the form of cash or non-cash considerations (e.g., minority equity interest).

Revenue related to research collaborations and agreements: The Company typically performs research and development services as specified in each respective agreement on a best efforts basis, and recognizes revenue from research funding under collaboration agreements in accordance with the 5-step process outlined in ASC Topic 606 ("Topic 606"): (i) identify the contract(s) with a customer; (ii) identify the performance obligations in the contract; (iii) determine the transaction price; (iv) allocate the transaction price to the performance obligations in the contract; and (v) recognize revenue when (or as) the entity satisfies a performance obligation. We recognize revenue when we satisfy a performance obligation by transferring control of the service to a customer in an amount that reflects the consideration that we expect to receive. Since the performance obligation under our collaboration agreements is generally satisfied over time, we elected to use the input method under Topic 606 to measure the progress toward complete satisfaction of a performance obligation.

Under the input method, revenue will be recognized on the basis of the entity's efforts or inputs to the satisfaction of a performance obligation (e.g., resources consumed, labor hours expended, costs incurred, or time elapsed) relative to the total expected inputs to the satisfaction of that performance obligation. The Company believes that the cost-based input method is the best measure of progress to reflect how the Company transfers its performance obligation to a customer. In applying the cost-based input method of revenue recognition, the Company uses actual costs incurred relative to budgeted costs to fulfill the performance obligation. These costs consist primarily of full-time equivalent effort and third-party contract costs. Revenue will be recognized based on actual costs incurred as a percentage of total budgeted costs as the Company completes its performance obligations.

A cost-based input method of revenue recognition requires management to make estimates of costs to complete the Company's performance obligations. In making such estimates, significant judgment is required to evaluate assumptions related to cost estimates. The cumulative effect of revisions to estimated costs to complete the Company's performance obligations will be recorded in the period in which changes are identified and amounts can be reasonably estimated. A significant change in these assumptions and estimates could have a material impact on the timing and amount of revenue recognized in future periods.

Revenue related to sublicensing agreements: If the sublicense to the Company's intellectual property is determined to be distinct from the other performance obligations identified in the arrangement, the Company recognizes revenue allocated to the license when technology is transferred to the customer and the customer is able to use and benefit from the license.

Milestone payments: At the inception of each arrangement that includes development, commercialization, and regulatory milestone payments, the Company evaluates whether the achievement of the milestones is considered probable and estimates the amount to be included in the transaction price. If the milestone payment is in exchange for a sublicense and is based on the sublicensee's subsequent sale of product, the Company recognizes milestone payment by applying the accounting guidance for royalties. To date, the Company has not recognized any milestone payment revenue resulting from any of its sublicensing arrangements.

Royalties: With respect to licenses deemed to be the predominant item to which the sales-based royalties relate, including milestone payments based on the level of sales, the Company recognizes revenue at the later of (i) when the related sales occur or (ii) when the performance obligation to which some or all of the royalty has been allocated has been satisfied (or partially satisfied). To date, the Company has not recognized any royalty revenue resulting from any of its sublicensing arrangements.

We invoice customers based on our contractual arrangements with each customer, which may not be consistent with the period that revenues are recognized. When there is a timing difference between when we invoice customers and when revenues are recognized, we record either a contract asset (unbilled accounts receivable) or a contract liability (deferred research and development obligations), as appropriate. If upfront fees or considerations related to sublicensing agreement are received prior to the technology transfer, the Company will record the amount received as deferred revenue from licensing agreement.

We are not required to disclose the value of unsatisfied performance obligations for (i) contracts with an original expected length of one year or less and (ii) contracts for which we recognize revenue at the amount to which we have the right to invoice for services performed.

The Company adopted a practical expedient to expense sales commissions when incurred because the amortization period would be one year or less.

Research and Development Costs

Research and development ("R&D") costs are expensed as incurred. R&D costs are related to the Company's internally funded pharmaceutical programs and other governmental and commercial projects.

Research and development costs consist of personnel-related costs, facilities, research-related overhead, services from independent contract research organizations, and other external costs. Research and development costs, including related party, during the years ended December 31, 2019 and 2018 were as follows:

	Years Ended December 31,	
	2019	**2018**
Outside contracted services	$ 2,578,507	$ 1,637,953
Contracted services - related party	868,720	1,215,536
Personnel related costs	423,898	376,312
Facilities, overhead and other	85,192	87,363
	$ 3,956,317	$ 3,317,164

Foreign Currency Transaction Gain or Loss

The Company uses the U.S. dollar as its functional currency, and it initially measures the foreign currency denominated assets and liabilities at the transaction date. Monetary assets and liabilities are then re-measured at exchange rates in effect at the end of each period, and property and non-monetary assets and liabilities are converted at historical rates.

Fair Value Measurements

The Company applies fair value accounting for certain financial instruments that are recognized or disclosed at fair value in the financial statements. The Company defines fair value as the price that would be received from selling an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Fair value is estimated by applying the following hierarchy, which prioritizes the inputs used to measure fair value into three levels and bases the categorization within the hierarchy upon the lowest level of input that is available and significant to the fair value measurement:

- Level 1 – Quoted prices in active markets for identical assets or liabilities.
- Level 2 – Observable inputs other than quoted prices in active markets for identical assets and liabilities, quoted prices for identical or similar assets or liabilities in inactive markets, or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities.
- Level 3 – Inputs that are generally unobservable and typically reflect management's estimate of assumptions that market participants would use in pricing the asset or liability.

Certain assets and liabilities on the balance sheets are measured at carrying values, which approximate fair values due to the short-term nature of these balances. Such items include cash and cash equivalents, accounts receivable, accounts payable, prepaid expenses, and accrued expenses. Investments in debt securities are recorded at amortized cost, and their estimated fair value amounts are provided by the third-party broker service for disclosure purposes.

The Company utilized various methods, including income, cost and market approaches to determine the fair value of its investments in equity interest, which may fall into Level 3 of the fair value hierarchy because of the significant unobservable inputs utilized in these valuation approaches. These inputs can be readily observable, market corroborated, or generally unobservable inputs. The Company utilizes valuation techniques that maximize the use of observable inputs and minimize the

use of unobservable inputs. Our key inputs included, but were not limited to, significant management judgments and estimates, including projections of the timing and amount of the project's cash flows, determination of a discount rate for the income approach, market multipliers, probability weighting of potential outcomes of legal and regulatory proceedings, and weighting of the valuations produced by the income, cost and market approaches.

Income Taxes

The Company accounts for income taxes under the asset and liability method in accordance with ASC Topic 740, "Income Taxes". Under this method, income tax expense /(benefit) is recognized for: (i) taxes payable or refundable for the current year and (ii) deferred tax consequences of temporary differences resulting from matters that have been recognized in an entity's financial statements or tax returns. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in the results of operations in the period that includes the enactment date. A valuation allowance is provided to reduce the deferred tax assets reported if based on the weight of the available positive and negative evidence, it is more likely than not some portion or all the deferred tax assets will not be realized.

In determining taxable income for the Company's consolidated financial statements, we are required to estimate income taxes in each of the jurisdictions in which we operate. This process requires the Company to make certain estimates of our actual current tax exposure and assessment of temporary differences between the tax and financial statement recognition of revenue and expense. In evaluating the Company's ability to recover its deferred tax assets, the Company must consider all available positive and negative evidence including its past operating results, the existence of cumulative losses in the most recent years and its forecast of future taxable income. Significant management judgment is required in determining our provision for income taxes, deferred tax assets and liabilities and any valuation allowance recorded against our net deferred tax assets.

The Company is required to evaluate the provisions of ASC 740 related to the accounting for uncertainty in income taxes recognized in a company's financial statements. ASC 740 prescribes a comprehensive model for how a company should recognize, present, and disclose uncertain positions that the company has taken or expects to take in its tax return. For those benefits to be recognized, a tax position must be more-likely-than-not to be sustained upon examination by taxing authorities. Differences between tax positions taken or expected to be taken in a tax return and the net benefit recognized and measured pursuant to the interpretation are referred to as "unrecognized benefits." A liability should be recognized (or amount of net operating loss carry forward or amount of tax refundable is reduced) for unrecognized tax benefits, because it represents a company's potential future obligation to the taxing authority for a tax position that was not recognized as a result of applying the provision of ASC 740.

The Company classifies accrued interest and penalties related to its tax positions as a component of income tax expense. The Company is not subject to U.S. federal, state and local tax examinations by tax authorities for the years before 2014. The United States Internal Revenue Service (the "IRS") has completed its review of the Company's 2015 tax filing on October 17, 2017, and no changes were required. See Note 4 for further discussion on the IRS examination of the 2016 tax return.

Comprehensive Income (Loss)

Comprehensive income (loss) includes net income (loss) and other revenue, expenses, gains and losses that are recorded as an element of shareholders' equity but are excluded from net income (loss) under U.S. GAAP. The Company does not have any significant transactions that are required to be reported in other comprehensive income (loss), and therefore, does not separately present a statement of comprehensive income (loss) in its consolidated financial statements.

Stock-Based Compensation

We recognize all share-based payments to employees and our Board of Directors (the "Board"), as non-cash compensation expense, in research and development expenses or general and administrative expenses in the consolidated statement of operations based on the grant date fair values of such payments. Stock-based compensation expense recognized each period is based on the value of the portion of share-based payment awards that is ultimately expected to vest during the period. Forfeitures are recorded as they occur.

For performance-based awards, the Company recognizes related stock-based compensation expense based upon its determination of the potential likelihood of achievement of the specified performance conditions at each reporting date.

Net Loss Per Share

Basic net loss per share is computed by dividing net loss available to common shareholders by the weighted average number of common shares outstanding during the reporting period. Diluted net loss per share adjusts the weighted average number of common shares outstanding for the potential dilution that could occur if common stock equivalents, such as stock options, warrants, restricted stock and convertible debt, were exercised or converted into common stock, calculated by applying the treasury stock method.

For the years ended December 31, 2019 and 2018, the effect of the potential exercise of options to purchase 3,860,390 and 3,552,890 shares of common stock, respectively, were excluded from the computation of diluted net loss per share as their effect would have been anti-dilutive.

Recent Accounting Pronouncements Not Adopted as of December 31, 2019

In June 2016, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") 2016-13, Financial Instruments - Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments, which modifies the measurement of expected credit losses of certain financial instruments. ASU 2016-13 will be effective for the Company beginning in the first quarter of 2020. The Company does not expect ASU 2016-13 to have a material impact on our consolidated financial statements.

In August 2018, the FASB issued ASU 2018-13, Fair Value Measurement (Topic 820) which modifies the disclosure requirements on fair value measurements. The effective date for the standard is fiscal years beginning after December 15, 2019, which for the Company is January 1, 2020. Early adoption is permitted. The new disclosure requirements for changes in unrealized gains and losses in other comprehensive income for recurring Level 3 measurements, the range and weighted average of significant unobservable inputs and the amended requirements for the narrative description of measurement uncertainty should be applied prospectively for only the most recent interim or annual period presented in the initial fiscal year of adoption. All other amendments should be applied retrospectively. The Company does not expect ASU 2018-13 to have a material impact on our consolidated financial statements.

Other pronouncements issued by the FASB or other authoritative accounting standards group with future effective dates are either not applicable or not significant to our consolidated financial statements.

Recently Adopted Accounting Pronouncements

In February 2016, the FASB issued ASU 2016-02, Leases (Topic 842). Under the new guidance, lessees will be required to recognize the assets and liabilities that arise from operating leases. A lessee should recognize in the statement of financial position a liability to make lease payments (the lease liability) and a right-of-use asset representing its right to use the underlying asset for the lease term. For leases with a term of twelve (12) months or less, a lessee is permitted to make an accounting policy election by class of underlying asset not to recognize lease assets and lease liabilities. Companies are required to recognize and measure leases using a modified retrospective approach at either the beginning of the earliest comparative period presented or the beginning of the reporting period in which the entity first applies the new standard. ASU 2016-02 was effective for the Company beginning in the first quarter of 2019. The adoption of this standard did not have a material impact on the Company's consolidated financial statements and related disclosures, as the Company's leases are one year or less and not required to recognize lease assets or liabilities under the new guidance.

In March 2017, the FASB issued ASU 2017-08, Receivables - Nonrefundable Fees and Other Costs (Subtopic 310-20): Premium Amortization of Purchased Callable Debt Securities. The amendments in this ASU shorten the amortization period for certain callable debt securities held at a premium. The amendments require the premium to be amortized to the earliest call date. The amendments do not require an accounting change for securities held at a discount; the discount continues to be amortized to maturity. The Company adopted the standard on January 1, 2019. The adoption of this standard did not have a material impact on the Company's consolidated financial statements and related disclosures.

In February 2018, the FASB issued ASU 2018-02, Income Statement - Reporting Comprehensive Income (Topic 220): Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income. The new guidance allows a reclassification from accumulated other comprehensive income to retained earnings for any stranded tax effects resulting from TCJA that was enacted on December 22, 2017. The new guidance will be effective for the Company beginning in the first quarter of 2019. The Company adopted the standard on January 1, 2019. The adoption of this standard did not have a material impact on the Company's consolidated financial statements and related disclosures.

In June 2018, the FASB issued ASU 2018-07, Compensation - Stock Compensation (Topic 718): Improvements to Non-employee Share-based Payment Accounting. The standard expands the scope of Topic 718 to include share-based payments issued to non-employees for goods or services, simplifying the accounting for share-based payments to non-employees by aligning it with the accounting for share-based payments to employees, with certain exceptions. The standard is effective for fiscal years beginning after December 15, 2018, including interim periods within those fiscal years with early adoption permitted, including adoption in an interim period. The Company adopted the standard on January 1, 2019. The adoption of this standard did not have a material impact on the Company's consolidated financial statements and related disclosures.

Note 2: Cash, Cash Equivalent, and Investments

The Company's investments in debt securities are classified as held-to-maturity and are recorded at amortized cost, and its investments in money market funds are classified as cash equivalents. The following table shows the Company's cash, available-for-sale securities, and short-term and long-term investment securities by major security type as of December 31, 2019 and 2018:

	December 31, 2019				
	Level (1)	Fair Value	Gross Unrealized Holding Gains	Gross Unrealized Holding Losses	Adjusted Cost
Cash and Cash Equivalents					
Cash		$ 1,010,510	$ —	$ —	$ 1,010,510
Money Market Funds	1	3,813,034	—	—	3,813,034
Subtotal		4,823,544	—	—	4,823,544
Short-Term Investment Securities (2)					
Corporate Bonds (4)	2	29,387,053	5,898	(17,991)	29,399,146
Long-Term Investment Securities (3)					
Corporate Bonds (4)	2	1,528,190	16,554	—	1,511,636
Total		$ 35,738,787	$ 22,452	$ (17,991)	$ 35,734,326

	December 31, 2018				
	Level (1)	Fair Value	Gross Unrealized Holding Gains	Gross Unrealized Holding Losses	Adjusted Cost
Cash and Cash Equivalents					
Cash		$ 1,048,272	$ —	$ —	$ 1,048,272
Money Market Funds	1	1,338,042	—	—	1,338,042
Subtotal		2,386,314	—	—	2,386,314
Short-Term Investment Securities (2)					
Corporate Bonds (4)	2	38,731,120	—	(85,321)	38,816,441
Total		$ 41,117,434	$ —	$ (85,321)	$ 41,202,755

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Notes:

(1) Definition of the three-level fair value hierarchy:
- Level 1 - Quoted prices (unadjusted) in active markets for identical assets or liabilities
- Level 2 - Other inputs that are directly or indirectly observable in the markets
- Level 3 - Inputs that are generally unobservable

(2) Short-term investment securities will mature within 12 months or less, from the applicable reporting date.

(3) Long-term investment securities will mature longer than 12 months from the applicable reporting date.

(4) The premium paid to purchase held-to-maturity investment securities was $ 233,550 and $ 378,681 for the years ended December 31, 2019 and 2018, respectively.

The Company considers declines in market value of its investment portfolio to be temporary in nature. The Company's investment policy requires investment securities to be investment grade and held to maturity with the primary objective to maintain a high degree of liquidity while maximizing yield. When evaluating an investment for other-than-temporary impairment, the Company reviews factors such as the length of time and extent to which fair value has been below its cost basis, the financial condition of the issuer and any changes thereto, changes in market interest rates, and whether it is more likely than not the Company will be required to sell the investment before recovery of the investment's cost basis. As of December 31, 2019, the Company does not consider any of its investments to be other-than-temporarily impaired.

Note 3: Research and Collaboration Agreements

BDI

On June 30, 2017, the Company entered into a strategic Research Services Agreement (the "RSA") with Biotechnology Developments for Industry in Pharmaceuticals, S.L.U. ("BDI Pharma"), and a Service Framework Agreement (the "SFA", and together with the RSA, the "R&D Agreements"), with VLP The Vaccines Company, S.L.U. ("VLPbio"), both of which are subsidiaries of Biotechnology Developments for Industry, S.L., a Spanish biotechnology company ("BDI Holdings" and together with BDI Pharma and VLPbio, "BDI").

The R&D Agreements provide a framework under which the parties will engage in a research and development collaboration encompassing several different projects over approximately a two-year period, with a focus on advancing Dyadic's proprietary C1 technology in the development of next generation biological vaccines and drugs. Dyadic expects to leverage the BDI team's previous C1 gene expression and industrial fermentation scale-up and commercialization experience with yeast and filamentous fungi processes to further advance Dyadic's proprietary C1 technology with the potential to commercialize certain biopharmaceutical product(s). All of the data and any products developed from the funded research projects will be owned by Dyadic.

Upon closing of the BDI transaction, the Company paid EUR € 1 million (the "RSA Initial Payment") in cash to engage BDI to develop designated C1 based product candidates and further improve the C1 manufacturing process, in consideration of which Dyadic also received a 16.1% equity interest in BDI Holdings and a 3.3% equity interest in VLPbio. BDI is obligated to spend a minimum amount of EUR €936,000 over two years in the conduct of the research and development project under the RSA. If the research and development activities produce a product that is selected for additional development and commercialization, then Dyadic expects to share with BDI a range of between 50% and 75% of the net income from such selected product, depending upon the amount of BDI's aggregate spend in the development of the selected product, with a minimum aggregate spend by BDI of EUR €1 million for a 50% share and EUR € 8 million for a 75% share. If BDI does not enter into an agreement with Dyadic for such additional development and commercialization of the selected product, then Dyadic will pay to BDI EUR €1.5 million of the net income from Dyadic's commercialization, if any, of the selected product. In addition, under the SFA, Dyadic agreed to purchase from BDI at least USD $1 million (the "SFA Commitment") in contract research services specified by Dyadic over two years since the closing of the BDI transaction.

The Company has concluded that BDI is not a Variable Interest Entity ("VIE"), because BDI has sufficient equity to finance its activities without additional subordinated financial support and its at-risk equity holders have the characteristics of a controlling financial interest. Additionally, Dyadic is not the primary beneficiary of BDI as Dyadic does not have the power to control or direct the activities of BDI or its operations. As a result, the Company does not consolidate its investments in BDI, and the financial results of BDI are not included in the Company's consolidated financial results.

The Company performed a valuation analysis of the components of the transaction and allocated the consideration based on the relative fair value of each component. As the fair value of BDI equity interest was considered immaterial, the RSA Initial Payment of approximately USD $1.1 million (EUR €1 million) was accounted for as a prepaid research and development collaboration payment on our consolidated balance sheet, and both the collaboration payment under the RSA and the SFA Commitment of USD $1 million paid by Dyadic was expensed as the related research services are performed by BDI. BDI has completed its services under the RSA in June 2019, and the entire amount of the RSA Initial Payment was expensed. As of December 31, 2019, Dyadic has fulfilled its SFA commitment, and all research projects under the SFA were completed.

As of December 31, 2019 and 2018, the prepaid research and development collaboration related to BDI recorded on our consolidated balance sheets were none and approximately $0.3 million, respectively. For the year ended December 31, 2019 and 2018, research and development expenses related to BDI were recorded as research and development - related party in our consolidated statements of operations in the amount of approximately $0.9 million and $ 1.2 million, respectively.

Novovet and Luina Bio Sub-License

On April 26, 2019, the Company entered into a sub-license agreement (the "Luina Bio Sub-License Agreement") with Luina Bio Pty Ltd. ("Luina Bio") and Novovet Pty Ltd ("Novovet"). Under the terms of the Luina Bio Sub-License Agreement, the Company granted to Novovet, subject to the terms of the license agreement entered into between the Company and Danisco US, Inc. on December 31, 2015, a worldwide sub-license to certain patent rights and know-how related to Dyadic's proprietary C1 gene expression platform for the exclusive and sole purpose of commercializing certain targeted antigen and biological products for the prevention and treatment of various ailments for companion animals.

In consideration of the license granted pursuant to the Luina Bio Sub-License Agreement, Dyadic received a 20% equity interest in Novovet ("Novovet Up-Front Consideration") in accordance with the terms of Novovet's Shareholder Agreement ("Shareholders Agreement"), and will receive a percentage of royalties on future net sales and non-sales revenue, if any, which incorporates Dyadic's proprietary C1 gene expression platform.

The Company evaluated the nature of its equity interest investment in Novovet and determined that Novovet is a VIE, because Novovet does not have sufficient equity to finance its activities without additional financial support from third party investors or lenders. However, the Company is not the primary beneficiary of Novovet as Dyadic does not have the power to control or direct the activities of Novovet that most significantly impact the VIE. As a result, the Company will not consolidate its investment in Novovet, but account for under the equity method investment, given that it has the ability to exercise significant influence, but not control, over Novovet.

To date Novovet has not raised the capital required to move this opportunity forward, and therefore, the Company has not transferred its C1 technology to Novovet. Therefore, the Novovet Up-Front Consideration received under the Luina Bio Sub-License Agreement, in the form of a 20% equity interest in Novovet, does not yet meet the revenue recognition criteria under ASC 606. The Company will account for its investment in Novovet and the related income under the equity method of accounting, once the transfer of its C1 technology is completed and Novovet receives adequate financing required to commence its research and development activities.

Alphazyme Sub-License

On May 5, 2019, the Company entered into a sub-license agreement (the "Alphazyme Sub-License Agreement") with Alphazyme, LLC ("Alphazyme"). Under the terms of the Alphazyme Sub-License Agreement, the Company granted to Alphazyme, subject to the terms of the license agreement entered into between the Company and Danisco US, Inc. on December 31, 2015, a sub-license to certain patent rights and know-how related to Dyadic's proprietary C1 gene expression platform for the purpose of commercializing certain pharmaceutical products that are used as reagents to catalyze a chemical reaction to detect, measure, or be used as a process intermediate to produce a nucleic acid as a therapeutic or diagnostic agent.

In consideration of the license granted pursuant to the Alphazyme Sub-License Agreement, Dyadic will receive a 7.5% ownership interest in Alphazyme ("Alphazyme Up-Front Consideration") upon the successful transfer of C1 technology, additional milestone payments and a percentage of royalties on net sales, if any, which incorporate Dyadic's proprietary C1 gene expression platform. The Alphazyme Sub-License Agreement has an initial exclusivity period of 18 months ("Exclusivity Period") beginning on the date the technology transfer has been completed. Following the Exclusivity Period, the sub-license will be nonexclusive. At any time prior to the expiration of the Exclusivity Period, Alphazyme has the option to extend the Exclusivity Period for an additional twelve (12) months in return for an additional 2.5% ownership interest in Alphazyme.

The Company evaluated the nature of its equity interest investment in Alphazyme and determined that Alphazyme is a VIE due to the capital structure of the entity. However, the Company is not the primary beneficiary of Alphazyme as Dyadic does not have the power to control or direct the activities of Alphazyme that most significantly impact the VIE. As a result, the Company does not consolidate its investments in Alphazyme. The Company will account for its investment in Alphazyme under the equity method, given that it has the ability to exercise significant influence, but not control, over Alphazyme.

As of December 31, 2019, the technology transfer of the C1 platform has not completed and Dyadic has not received the Alphazyme Up-Front Consideration. Therefore, no revenue form the Alphazyme Sub-Licensing Agreement was recorded at December 31, 2019.

Upon receipt of the Alphazyme Up-Front Consideration, Dyadic will become a party to the Alphazyme Limited Liability Company Agreement pursuant to which the Company will agree to certain customary rights, covenants and obligations.

Research and Commercialization Collaboration with Serum Institute of India

On May 7, 2019, the Company entered into a research and commercialization collaboration with Serum Institute of India Pvt., Ltd ("Serum"). Under the terms of this collaboration, Serum anticipates applying Dyadic's C1 technology to express up to twelve (12) antibodies and vaccines and will undertake commercially best efforts to fully develop and commercialize the proteins expressed from Dyadic's C1 technology. Dyadic has agreed to grant Serum the option to obtain an exclusive commercial sub-license for each of the twelve (12) proteins in return for certain research funding, milestone payments and royalties for 15 years from the date of the first commercial sale.

For the year ended December 31, 2019, the Company recognized approximately $ 118,000 in research and development revenue from Serum.

Note 4: Income Taxes

The Tax Cuts and Jobs Act ("TCJA") was enacted on December 22, 2017 and become effective January 1, 2018. The TCJA contains several key provisions, including a reduction in the U.S. Federal corporate income tax rate from 35% to 21% and a change to the corporate alternative minimum tax ("AMT").

The TCJA eliminated the corporate AMT and permits existing AMT credit carryforwards to be used to reduce the regular tax obligation in 2018, 2019, and 2020. Any AMT credit carryforwards that do not reduce regular taxes are eligible for a 50% refund in 2018 through 2020, and a 100% refund in 2021. Accordingly, we reclassified the balance of the AMT credit from the deferred tax asset to an income tax receivable in 2018. The corresponding balance in the valuation allowance has been reversed into income tax benefit in the amount of $1,001,233. As of December 31, 2019, we have received 50% or approximately $ 0.5 million refund for tax year 2018 and expect to receive the remaining 50% over tax years 2019 through 2021.

The significant components of loss before income taxes are as follows:

	Years Ended December 31,	
	2019	2018
U.S. operations	$ (8,274,712)	$ (6,622,695)
Foreign operations	(22,947)	(75,218)
Total loss before provision for income taxes	$ (8,297,659)	$ (6,697,913)

The significant components of our (benefit) provision for income tax for the years ended December 31, 2019 and 2018 are as follows:

	Years Ended December 31,	
	2019	2018
Current and deferred tax (benefit) expense		
Federal	$ —	$ (1,001,233)
State	—	—
Foreign	—	—
	$ —	$ (1,001,233)

The income tax provision differs from the expense amount that would result from applying the federal statutory rates to income before income taxes due to deferred income tax resulting to permanent differences, state taxes and a change in the deferred tax valuation allowance.

The reconciliation between the statutory tax rate and the Company's actual effective tax rate is as follows:

	Years Ended December 31,	
	2019	2018
Tax at U.S. statutory rate	(21.00)%	(21.00)%
State taxes, net of federal benefit	(4.61)	(4.25)
Non-deductible items	(6.49)	0.44
Change in valuation allowance	30.99	10.25
True-up adjustment	0.18	(0.17)
Foreign operations	(0.07)	(0.28)
Change in tax rates	1.00	—
AMT adjustment	—	0.06
Effective income tax rate	— %	(14.95)%

The significant components of the Company's net deferred income tax assets are as follows:

	December 31,	
	2019	2018
Stock option expense	$ 275,000	$ 242,700
NOL carryforward	5,214,200	2,668,000
Research and development credits	1,656,500	1,656,500
Other	4,400	11,200
Deferred tax asset, net of deferred tax liabilities	7,150,100	4,578,400
Valuation allowance	(7,150,100)	(4,578,400)
Net deferred tax asset	$ —	$ —

Deferred income taxes reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. In assessing the realizability of deferred tax assets, management evaluates whether it is more likely than not that some portion or all of the deferred tax assets will not be realized. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during the periods in which those temporary differences become deductible. Management considers the scheduled reversal of deferred tax liabilities, projected future taxable income and tax planning strategies in making this assessment. Based on management's evaluation, the net deferred tax asset was offset by a full valuation allowance as of December 31, 2019 and 2018.

The Company had net operating loss ("NOL") carryforwards available in 2019 that will begin to expire in 2037. As of December 31, 2019, and 2018, the Company had NOLs in the amount of approximately $19.7 million and $9.1 million, respectively.

As of December 31, 2019 and 2018, no liability for unrecognized tax benefits was required to be reported. The Company does not expect any significant changes in its unrecognized tax benefits in the next year.

On June 20, 2019, the Company received a letter from the IRS informing the Company that its 2016 federal tax return was selected for examination. In August 2019, the Company had a meeting with the IRS agent and subsequently provided the IRS with all requested information under several Information Document Requests (IDRs). Thus far, the Company has not been informed of any issue. As the IRS audit is still in progress, we are unable to predict when the audit will be concluded or whether any assessment will be proposed.

Indian Tax Deducted/Collected at Source

Income generated in India is subject to Tax Deducted at Source ("TDS"), which is a means of collecting income tax at the source when income is generated rather than a later date by the Indian government. The TDS amount paid can be used as foreign tax credit for US tax purposes. However, we do not expect to use the credit due to our loss from operation. As a result,

the Company recorded a provision for income taxes of approximately $ 10,000 as a result of TDS for the year ended December 31, 2019.

Note 5: Commitments and Contingencies

Leases

Jupiter, Florida Headquarters

The Company's corporate headquarters are located in Jupiter, Florida. The Company occupies approximately 4,900 square feet with a monthly rental rate and common area maintenance charges of approximately $9,700. The lease expires on June 30, 2020, and thereafter, the Company will reconsider the square footage of the leased space to align with the staffing requirements of the future operations of the Company.

The Netherlands Office

The Company maintains a small satellite office in Wageningen, Netherlands. In 2018, the Company occupied approximately 258 square feet with annual rentals and common area maintenance charges of approximately $4,700. The lease expired on January 31, 2019, and thereafter, the Company entered into a new lease with the same lessor (the "New Lease"). The New Lease has a one year term with an auto renew period till January 31, 2021, and includes a flexible office space with annual rentals of approximately $4,000.

VTT Research Contract Extension

On June 28, 2019, the Company extended its research contract ("Contract") through June 2022 with VTT Technical Research Centre of Finland Ltd. ("VTT"). Under the terms of this Contract, Dyadic will pay VTT a total of EUR €2.52 million over the next three years to continue developing Dyadic's C1 fungal expression system for therapeutic protein production, including C1 host system improvement, glycoengineering, and management of third-party target protein projects. VTT is subject to an additional success bonus up to EUR €450,000 based on the technical targets stipulated in the Contract. Dyadic and its sublicensees will also have the right to use synthetic promoters developed by VTT with an access fee. On October 25, 2019, the Company expanded the Contract to pay an additional EUR €690,000 over the next 1.5 years to reinforce the glycoengineering work. Dyadic retains the right to terminate the Contract with 90 days' notice.

Purchase Obligations

The following table provides a schedule of commitments related to agreements to purchase certain services in the ordinary course of business, as of December 31, 2019:

2020	$	2,762,175
2021		1,103,632
2022		496,268
Total	$	4,362,075

The purchase obligations in the table above are primarily related to our contracts with the Company's contract research organizations to provide certain research services. The contracts set forth the Company's minimum purchase requirements that are subject to adjustments based on certain performance conditions. All contracts expire in 2022.

Legal Proceedings

We are not currently involved in any litigation that we believe could have a materially adverse effect in our financial condition or results of operations. From time to time, the Company is subject to legal proceedings, asserted claims and investigations in the ordinary course of business, including commercial claims, employment and other matters, which management considers immaterial, individually and in the aggregate. The Company makes a provision for a liability when it is both probable that a liability has been incurred and the amount of the loss can be reasonably estimated. The requirement for these provisions is reviewed at least quarterly and adjusted to reflect the impact of negotiations, settlements, rulings, advice of legal counsel and other information and events pertaining to a particular case. Litigation is inherently unpredictable and costly.

Protracted litigation and/or an unfavorable resolution of one or more of proceedings, claims or investigations against the Company could have a material adverse effect on the Company's consolidated financial position, cash flows or results of operations.

Note 6: Share-Based Compensation

Description of Equity Plans

The 2011 Equity Incentive Plan (the "2011 Plan") was adopted by the Board on April 28, 2011 and approved by the Company's stockholders on June 15, 2011. The 2011 Plan serves as the successor to the Company's 2006 Stock Option Plan (the "2006 Plan"). Since the effective date of the 2011 Plan, all future equity awards were made from the 2011 Plan, and no additional awards will be granted under the 2006 plan. Under the 2011 Plan, 3,000,000 shares of the Company's common stock were initially reserved for issuance pursuant to a variety of share-based compensation awards, plus any shares available for issuance under the 2006 Plan or are subject to awards under the 2006 Plan which are forfeited or lapse unexercised and which following the effective date are not issued under the 2006 Plan. In accordance with the provision of the 2011 Plan, the Board approved an increase of 1,500,000 shares each year to the plan on January 1, 2019 and 2020.

As of December 31, 2019, the Company had 3,860,390 stock options outstanding and an additional 1,547,211 shares of common stock available for grant under the 2011 Plan. As of December 31, 2018, there were 3,552,890 stock options outstanding and 1,136,211 shares of common stock available for grant under the 2011 Plan.

Stock Options

Options are granted to purchase common stock at prices that are equal to the fair value of the common shares on the date the option is granted. Vesting is determined by the Board at the time of grant. The term of any stock option awards under the Company's 2011 Plan is no more than 10 years except for qualified options granted to the CEO (five years) and certain contractors (two years).

The grant-date fair value of each option grant is estimated using the Black-Scholes option pricing model and amortized on a straight-line basis over the requisite service period, which is generally the vesting period, for each separately vesting portion of the award as if the award was, in substance, multiple awards. Use of a valuation model requires management to make certain assumptions with respect to selected model inputs, including the following:

Risk-free interest rate. The risk-free interest rate is based on U.S. Treasury rates with securities approximating the expected lives of options at the date of grant.

Expected dividend yield. The expected dividend yield is zero, as the Company has never paid dividends to common shareholders and does not currently anticipate paying any in the foreseeable future.

Expected stock price volatility. The expected stock price volatility was calculated based on the Company's own volatility since the DuPont Transaction. The Company reviews its volatility assumption on an annual basis and has used the Company's historical volatilities since 2016, as the DuPont Transaction resulted in significant changes in the Company's business and capital structure.

Expected life of option. The expected life of option was based on the contractual term of the option and expected employee exercise and post-vesting employment termination behavior. The Company uses the weighted average vesting period and contractual term of the option as the best estimate of the expected life of a new option, except for the options granted to the CEO (i.e., 5 years) and certain contractors (i.e., 2 years).

Discount for lack of marketability. The Company applies a discount to reflect the lack of marketability due to the holding period restriction of its shares under Rule 144 prior to its April 2019 uplisting to the NASDAQ. The discount for lack of marketability is no longer applicable since the uplisting of the Company's common stock.

The assumptions used in the Black-Scholes option pricing model for stock options granted for the year ended December 31, 2019 are as follows:

	Years Ended December 31,	
	2019	2018
Risk-Free interest rate	1.69% - 2.50%	2.24% - 2.96%
Expected dividend yield	—%	—%
Expected stock price volatility	28.59% - 37.29%	27.80% - 30.36%
Expected life of options	2 - 6.25 Years	5 - 6.25 years
Discount for lack of marketability	0 - 8.48%	9.35%

The following table summarizes the combined stock option activity under the Company's Equity Compensation Plans:

	Shares	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Term (Years)	Aggregate Intrinsic Value
Outstanding at December 31, 2017	2,712,390	$1.62	6.09	$69,090
Granted	1,120,500	1.44		
Exercised	(30,000)	0.15		
Expired	—	—		
Canceled	(250,000)	1.69		
Outstanding at December 31, 2018	3,552,890	$1.57	5.06	$1,149,461
Granted [1]	1,089,000	2.26		
Exercised [2]	(781,500)	1.60		
Expired	—	—		
Canceled	—	—		
Outstanding at December 31, 2019	3,860,390	$1.76	5.69	$13,287,932
Exercisable at December 31, 2019	2,747,073	$1.65	4.61	$9,712,729

Notes:

[1] Represents the following stock options granted:

- Annual share-based compensation awards on January 2, 2019, including: (a) 600,000 stock options with an exercise price of $1.87 per share granted to executives and key personnel, vesting upon grant, or one year anniversary, or vest annually in equal installments over four years, (b)300,000 stock options with an exercise price of $1.87 per share granted to the Board, vesting 25% upon grant and the remaining 75% will vest annually in equal installments over four years, and (c) 24,000 stock options with an exercise price of $1.87 per share granted to employees, vesting annually in equal installments over four years.
- One-time awards granted on (a) January 2, 2019 of 50,000 stock options with an exercise price of $1.87 per share granted to a contractor, vesting upon one year anniversary, (b) March 7, 2019 of 15,000 stock options with an exercise price of $3 per share granted to a contractor, vesting upon one year anniversary, (c) June 25, 2019 of 75,000 stock options with an exercise price of $5.83 per share granted to three members of the Board, vesting upon one year anniversary, and (d) June 28, 2019 of 25,000 stock options with an exercise price of $6.26 per share granted to the Chief Financial Officer, vesting immediately.

[2] Represents the following stock options exercised:

- A total of 781,500 stock options exercised with a weighted average market price of $ 1.60, including (a) net share exercise of 440,000 stock options resulting in the issuance of 304,171 shares of common stock, and surrender of 135,829 shares, and (b) 341,500 stock options exercised with cash payment.

The weighted average grant-date fair market value of stock options granted for the years ended December 31, 2019 and 2018 was $ 0.69 and $0.41 respectively, based on the Black-Scholes option pricing model. The intrinsic value of options exercised for the years ended December 31, 2019 and 2018 was $2,925,662 and $39,360, respectively.

As of December 31, 2019 and 2018, total unrecognized compensation cost related to non-vested stock options granted under the Company's share option plan was $222,330, and $162,786, respectively, which is expected to be recognized over a weighted average period of 1.83 years and 2.39 years, respectively. The Company will adjust unrecognized compensation cost for actual forfeitures as they occur.

Compensation Expenses

We recognize all share-based payments to employees, consultants, and our Board, as non-cash compensation expense, in research and development expenses or general and administrative expenses in the consolidated statement of operations, and these charges had no impact on the Company's reported cash flows. Stock-based compensation expense is calculated on the grant date fair values of such awards, and recognized each period based on the value of the portion of share-based payment awards that is ultimately expected to vest during the period. Forfeitures are recorded as they occur.

For performance-based awards, the Company recognizes related stock-based compensation expense based upon its determination of the potential likelihood of achievement of the specified performance conditions at each reporting date. For the year ended December 31, 2019, the Company recognized the expense related to the performance-based awards granted prior years upon the Company's April 2019 uplisting to the NASDAQ of approximately $483,000.

Total non-cash stock option compensation expense was allocated among the following expense categories:

	Years Ended December 31,	
	2019	**2018**
General and administrative	$ 1,069,152	$ 390,854
Research and development	101,927	76,349
Total	$ 1,171,079	$ 467,203

Note 7: Shareholders' Equity

Issuances of Common Stock

The shares of common stock issued for the years ended December 31, 2019 and 2018 were 645,671 and 30,000, respectively, with a weighted average issue price per share of $1.60 and $0.15, respectively.

Stock Repurchases and Buybacks

Stock Repurchase Programs

On February 16, 2016, the Board authorized a one-year stock repurchase program, under which the Company was authorized to repurchase up to $ 15 million of its outstanding common stock (the "2016 Stock Repurchase Program"). The 2016 Stock Repurchase Program ended on February 15, 2017.

On August 16, 2017, the Board authorized a new one-year stock repurchase program, under which the Company may repurchase up to $ 5 million of its outstanding common stock (the "2017 Stock Repurchase Program"). On August 6, 2018, the Board authorized an extension of this stock repurchase program through August 15, 2019. The 2017 Stock Repurchase Program ended on August 15, 2019.

The following table summarizes the Company's stock repurchase activities:

Period	Total Number of Shares Purchased	Average Price Paid per Share	Amount	Total Number of Treasury Shares Purchased as Part of Publicly Announced Plan	Maximum Dollar Value of Shares that May Yet Be Purchased Under the Plan
Privately Negotiated Transactions:					
January 12, 2016 - Abengoa repurchased and retired shares	2,136,752	$ 1.35	$ 2,884,615	—	N/A
January 11, 2017 - Pinnacle Family Office Investments L.P. repurchased shares	2,363,590	1.54	3,639,929	2,363,590	N/A
					$ 15,000,000
2016 Stock Repurchase Program:					
January through February 2017	7,863,980	1.58	12,448,283	7,863,980	$ 2,551,717
2017 Stock Repurchase Program:					$ 5,000,000
September through December 2017	381,607	1.41	537,661	381,607	$ 4,462,339
January through August 2018	1,644,325	1.40	2,304,042	1,644,325	$ 2,158,297
Total open market and privately negotiated purchases	14,390,254	$ 1.52	$ 21,814,530	12,253,502	

Treasury Stock

As of December 31, 2019, and 2018, there were 12,253,502 shares of common stock held in treasury, at a cost of approximately $ 18.9 million, representing the purchase price on the date the shares were surrendered to the Company.

Note 8: Subsequent Events

For purpose of disclosure in the consolidated financial statements, the Company has evaluated subsequent events through March 30, 2020, the date the consolidated financial statements were available to be issued. Except as discussed below, management is not aware of any material events that have occurred subsequent to the balance sheet date that would require adjustment to, or disclosure in the accompanying financial statements.

Our Research Contract with VTT

During the first quarter of 2020, we expanded our research contract with VTT Technical Research Centre of Finland Ltd. to pay an additional EUR € 700,000 over the next 19 months to accelerate the glycoengineering work.

Stock Option Grant

On January 2, 2020, the Company granted to executives and key personnel an aggregate of 525,000 stock options with an exercise price of $ 5.27. The options will vest upon one-year anniversary or annually in equal installments over four years.

On January 2, 2020, the Company granted to the Board an aggregate of 325,000 stock options with an exercise price of $ 5.27. The options will vest upon one-year anniversary.

On January 2, 2020, the Company granted to non-executive employees an aggregate of 23,000 stock options with an exercise price of $ 5.27. The options will vest annually in equal installments over four years.

On January 2, 2020, the Company granted 15,000 stock options to a consultant with an exercise price of $ 5.27. The options will vest upon one-year anniversary.

On March 23, 2020, the Company granted 25,000 stock options to a consultant with an exercise price of $ 3.99. The options will vest six months from the date of grant.

In March 2020, the World Health Organization declared the outbreak of a novel coronavirus (COVID-19) as a pandemic, which continues to spread throughout the United States. As of the date of issuance of the financial statements, the Company's operations have not been significantly impacted, however, the Company continues to monitor the situation.

Exhibit 4.2

DESCRIPTION OF SECURITIES

References to the "Company", "our", or "us" herein are, unless the context otherwise indicates, only to Dyadic International, Inc. and not to any of its subsidiaries.

Description of Capital Stock

General

The following is a summary of information concerning capital stock of the Company. The summaries and descriptions below do not purport to be complete statements of the relevant provisions of the Company's Restated Certificate of Incorporation, amended as of November 1, 2004 ("**Restated Certificate**") and Second Amended and Restated Bylaws, amended as of December 13, 2018 (the "**Bylaws**"), and are entirely qualified by these documents.

Capital Stock

The Company is authorized to issue up to 100,000,000 shares of common stock ("**Common Stock**"), par value $0.001 per share, and 5,000,000 shares of preferred stock (the "**Preferred Stock**"), par value $0.0001 per share, the rights and preferences of which may be established from time to time by the Company's board of directors (the "**Board**"). The Common Stock is registered under Section 12(g) of the Securities Exchange Act of 1934 and listed on the NASDAQ Stock Market LLC's NASDAQ Capital Market under the ticker symbol "DYAI." The Preferred Stock is not registered under Section 12 of the Exchange Act and there is no Preferred Stock currently outstanding.

Common Stock

Shares Outstanding. As of March 29, 2020, the Company had 27,359,157 shares of Common Stock outstanding.

Dividends. Holders of our Common Stock are entitled to receive ratably, from funds legally available for the payment thereof, dividends when and as declared by resolution of the Board, subject to any preferential dividend rights which may be granted to holders of any Preferred Stock authorized and issued by the Board. Delaware law allows a corporation to pay dividends only out of surplus, as determined under Delaware law.

Voting Rights. Holders of Common Stock do not have cumulative voting rights and are entitled to one vote per share on all matters to be voted upon by stockholders.

Other Rights. Our Common Stock is not entitled to preemptive rights and is not subject to redemption, including sinking fund provisions, or conversion. Upon our liquidation, dissolution or winding up, the assets, if any, legally available for distribution to stockholders are distributable ratably among the holders of Common Stock after payment of all classes or series of Preferred Stock. The rights, preferences and privileges of holders of Common Stock are subject to the preferential rights of all classes or series of Preferred Stock that may be issued in the future.

Fully Paid. All outstanding shares of Common Stock are validly issued, fully-paid and non-assessable. This means the full purchase price for the outstanding shares of Common Stock have been paid and the holders of such shares will not be assessed any additional amounts for such shares.

Anti-takeover Effects of the Restated Certificate and Bylaws

Certain provisions in our Restated Certificate and Bylaws could have the effect of impeding or discouraging the acquisition of control of us by means of a merger, tender offer, proxy contest or

otherwise, including a transaction in which our stockholders would receive a premium over the market price for their shares, and thereby protects the continuity of our management. Specifically, our Restated Certificate or Bylaws contain the following provisions:

- *Staggered Board*. The Board is composed of three classes of directors who serve staggered three-year terms so that only one-third of the directors are eligible for election at any annual meeting of stockholders, and cumulative voting in the election of directors is specifically denied.

- *Elimination of Stockholder Action by Written Consent*. Any action permitted to be taken by the Company's stockholders is required to be effected at a duly called annual or special meeting of stockholders and cannot be effected by a written consent.

- *Special Meeting of Stockholders*. The Company's stockholders will not be permitted to call a special meeting of stockholders, and the only business matters permitted to be conducted at any annual or special meeting of stockholders will be business matters properly brought before that meeting in accordance with specified procedures.

- *Procedures for Stockholder Nominations and Proposals*. Specific procedures are established for stockholder nominations for directors and stockholder proposals of business to be considered at an annual or special meeting of stockholders.

- *Board Vacancies and Removals*. The Board establishes the number of directors, and vacancies on the Board must be filled by a majority approval of the remaining directors, and directors may not be removed by stockholder action without cause.

- *Amendment or Repeal of Bylaws*. The Board is empowered to adopt, amend or repeal the Bylaws, while our stockholders may adopt, amend or repeal the Bylaws only upon an affirmative vote of the holders of at least two-thirds of the voting power of all then outstanding shares of stock entitled to vote.

- *Undesignated Preferred Stock*. The Board has the power to designate and establish new classes of preferred stock having terms that the Board determines to be advisable.

- *Approval of Certain Matters*. With respect to extraordinary matters that are brought to the Company's stockholders for a vote, including the sale of all or substantially all of our assets, a merger, a consolidation, the conversion of the Company into another type of entity or the amendment of the Restated Certificate, unless that matter is affirmatively recommended by the Board, its approval will require the affirmative vote of the holders of at least two-thirds of the voting power of all then outstanding shares of stock entitled to vote.

The foregoing provisions of our Restated Certificate and Bylaws and other provisions pertaining to the limitation of liability and indemnification of directors may be amended or repealed only with the affirmative vote of the holders of at least two-thirds of the voting power of all then outstanding shares of stock entitled to vote.

In addition, if in the due exercise of its fiduciary obligations, the Board were to determine that a takeover proposal was not in the Company's best interest, shares of Common Stock or Preferred Stock could be issued by the Board without stockholder approval in one or more transactions that might prevent or render more difficult or costly the completion of the takeover by:

- Diluting the voting or other rights of the proposed acquirer or insurgent stockholder group;
- Putting a substantial voting block in institutional or other hands that might undertake to support the incumbent Board; or
- Effecting an acquisition that might complicate or preclude the takeover.

The effect of all of the foregoing provisions may be to delay or prevent a tender offer or takeover attempt that a stockholder may determine to be in his or her best interest, including attempts that might result in a premium over the market price for the shares held by the stockholders.

Anti-takeover Effects of Delaware Law

The Company is subject to Section 203 of the Delaware General Corporation Law (" **Section 203**"), an anti-takeover law. In general, Section 203 prohibits a publicly held Delaware corporation from engaging in a business combination with an interested stockholder for a period of three years following the date such person became an interested stockholder, unless the business combination or the transaction in which such person became an interested stockholder is approved in a prescribed manner. Generally, a "business combination" includes a merger, asset or stock sale, or other transaction resulting in a financial benefit to the interested stockholder. Generally, an "interested stockholder" is a person that, together with affiliates and associates, owns, or within three years prior to the determination of interested stockholder status did own, 15% or more of a corporation's voting stock. The existence of this provision may have an anti-takeover effect with respect to transactions not approved in advance by the Board, including discouraging attempts that might result in a premium over the market price for the shares of Common Stock.

INTRACOASTAL POINTE OFFICE BUILDING
AMENDMENT TO OFFICE LEASE

This Amendment to Office Lease Agreement made and entered into this 21st day of June, 2019 by and between Quentin Partners Co. as Agent for Intracoastal Pointe, Inc. (both Florida corporations), as "Landlord;" and Dyadic International, Inc., as "Tenant."

WITNESSETH:

WHEREAS, Landlord and Tenant entered into that Office Lease dated December 30, 2010, and the subsequent Amendments; relative to the Leased Premises set forth therein. Premises currently consist of Suite 404 and 405 (4,872 ± s.f.); and

WHEREAS, Landlord and Tenant now desire to extend the term of the lease by twelve months.

TERM: Term will begin on July 1, 2019 and end on June 30, 2020 (unless otherwise terminated as provided in the Lease).

TOTAL RENT:
7/01/19-6/30/20: $13.00 per square foot; $63,336.00 / year; $5,278.00 / month*
*All rates plus CAM (which shall never be less than $9.30 psf) plus sales tax (currently at 6.7%).

PREMISES: Landlord will deliver premises in an "as is" condition.

Except as set forth herein, all other terms, conditions, provisions and requirements of the Lease remain unchanged and in full force and effect.

IN WITNESS WHEREOF, the parties hereto have caused this Amendment to be executed on the day and year first above written.

LANDLORD:
QUENTIN PARTNERS CO.
As Agent for: Intracoastal Pointe Inc.

By: James Q. Riordan, Jr., President

TENANT:
DYADIC INTERNATIONAL, INC.

By: Mark Emalfarb, CEO

WITNESS:

Sharon Wood

WITNESS:

By:

Exhibit 31.1

Certification of Principal Executive Officer
Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
and Securities and Exchange Commission Release 34-46427

I, Mark A. Emalfarb, certify that:

1. I have reviewed this Annual report on Form 10-Q of Dyadic International 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 control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and we have:

5. 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 control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and we 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. 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;
    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

6. 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

a. 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: March 30, 2020
By: /s/ Mark A. Emalfarb

Name: Mark A. Emalfarb
Title: Chief Executive Officer

Exhibit 31.2

Certification of Principal Executive Officer
Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
and Securities and Exchange Commission Release 34-46427

I, Ping W. Rawson, certify that:

1. I have reviewed this Annual report on Form 10-K of Dyadic International 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 control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and we 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. 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;
    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:	March 30, 2020
By:	/s/ Ping W. Rawson
Name:	Ping W. Rawson
Title:	Chief Financial Officer

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 Dyadic International Inc. (the "Company") on Form 10-K for the fiscal year ended December 31, 2019 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Mark A. Emalfarb, certify, pursuant to 18 U.S.C. ss. 1350, as adopted pursuant to ss. 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

(1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date:	March 30, 2020
By:	/s/ Mark A. Emalfarb
Name:	Mark A. Emalfarb
Title:	Chief Executive Officer

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 Dyadic International Inc. (the "Company") on Form 10-K for the fiscal year ended December 31, 2019 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Ping W Rawson, certify, pursuant to 18 U.S.C. ss. 1350, as adopted pursuant to ss. 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

(1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date:	March 30, 2020
By:	/s/ Ping W. Rawson
Name:	Ping W. Rawson
Title:	Chief Financial Officer