2020
ANNUAL REPORT

Notice of 2021 Annual Meeting of Stockholders &
Proxy Statement

amyris

amyris

Amyris, Inc.
5885 Hollis Street, Suite 100
Emeryville, California 94608

"We have built a special culture at Amyris where our strategy and day-to-day decisions are informed by our No Compromise® promise to create solutions that are natural, sustainably sourced, and better for people and the planet without compromise to performance—we deliver the best performing products while seeking to support our planet."

John G. Melo

President and
Chief Executive Officer

April 12, 2021

To Our Valued Shareholders:

2020 is a year that will be remembered by many because of the Covid-19 pandemic, which led to a widespread health crisis and unprecedented economic uncertainty. During these times, we have continued to make the safety and wellbeing of our people our top priority.

Despite these challenges, 2020 was one of the most productive years in the company's history during which we transformed our business, strengthened our industry leadership and advanced our strategic position with our technology, consumer and ingredients portfolio, and our much improved financial position.

2020 Financial Highlights

We made significant progress on our strategic initiatives in 2020. We delivered six new ingredients at scale, completed a successful $200 million equity financing, and significantly reduced our total debt. With the continued record growth in our product revenue, we believe that we are well positioned to continue to drive sector leading performance into the future.

We delivered record sales revenue of $173 million for full year 2020 demonstrating 13% growth versus the prior year. Product revenue of $112 million increased 72% versus the prior year driven by record consumer revenue and record ingredients growth, up 197% and 26%, respectively. Non-GAAP gross* margin of 56% improved $11 million compared to the prior year, and cash operating expense* of $181 million decreased by $1 million or 1% compared to the prior year primarily due to decreases in G&A and R&D expenses, which were partly offset by increases in marketing expenses to support consumer brands growth. Adjusted EBITDA* of -$95 million improved $8 million compared to the prior year, primarily due to higher revenue and improved gross margins.

We strengthened our balance sheet from our successful equity raise in June. Throughout the year, we continued to simplify and reduce debt from $297 million to $171 million, resulting in significantly reducing our debt servicing expense.

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* See the section entitled "Reconciliations of Non-GAAP Financial Measures" following Appendix B of this Proxy Statement for reconciliations between GAAP and non-GAAP financial measures.

We Are Delivering on The Promise of Synthetic Biology

During 2020, we continued to advance our strategic priorities around the three core pillars of our business.

- Our proprietary Lab-to-Market technology platform delivers predictable commercialization, significant cost reduction and fast time-to-market.
- Our Ingredients Pipeline delivers unique natural, sustainably sourced molecules that disrupt markets and enable the ESG agenda of industry leaders.
- Our Consumer Brands deliver on the No Compromise® promise for health, clean beauty and personal care products that make people and our planet healthier.

Proprietary Lab-to-Market Technology Platform

Our R&D and process development functions have been very productive this past year delivering six new ingredients versus a target of two to three, and we have continued to expand our product development pipeline.

At the heart of what we do is clean, sustainably sourced chemistry and we are leading this effort in beauty, personal care and health markets where we believe there are clear demand drivers and fast value creation for consumers, investors and our planet. By engineering the genetics of yeast strains and fermenting them in sugarcane syrup, Amyris has pioneered the ability to convert basic plant sugars to hydrocarbon molecules, to be used as clean, sustainable ingredients for consumer products. Our technology platform transforms what's renewable to recreate what's finite in a sustainable way that costs less.

Ingredients Pipeline

With more than 15 years of research, investment in technology, commercial development and scientific breakthroughs, we have mastered the Lab-to-Market capability to create unique, natural ingredients for consumer products. We currently have 13 ingredients in the market and another 18 in active development. As a result of current transactions and commercial activity, we have an additional 8-10 ingredients in our development pipeline. We are adding ingredients at a faster rate than ever before to solidify our long-term growth.

We continue to be focused on target end-markets, including clean beauty, health and wellness, and flavor and fragrance. We also have ingredients in the pipeline that we expect to be applicable to more than one end-market.

Our first commercial ingredient took about 40 months from strain to pilot plant run and today we average less than a year. Our cost of product development has dropped by 90%, our time to market has reduced by 80%.

Our technology platform presents tremendous value as synthetic biology increasingly gains momentum as a path for addressing modern day societal problems. The more molecules we scale, the more efficient we become and the more value we generate from our technology. It's a great example of the impact of the network effect in biological engineering. Through our value creation, we are enabling the ESG agendas of our customers and partners.

Consumer Brands

We have a unique connection between the science, our ingredients and our consumer product portfolio. The molecules and ingredients we develop serve as the foundation of our consumer brands. A hero ingredient such as squalane from sugarcane is a building block for the product formulations in our brands.

Skincare is the largest portion of the global beauty market, and also one of the fastest growing beauty segments. We are well-positioned in this market with Biossance as our clean beauty skincare brand, and with Pipette, our clean baby and family care brand. We are adding new brands during 2021 that will address other fast-growing beauty segments, including haircare with JVN and clean color cosmetics with Rose Inc. We are also adding two specialty skincare brands: Terasana for acne and Costa Brazil, a clean luxury skincare brand.

In 2020, we delivered excellent performance across our consumer business with stronger than planned direct-to-consumer growth. Looking ahead, we are executing on four key drivers to deliver growth.

- New brands to complete our offering in high growth skincare and personal care markets.

- Product line extension from exclusive formulations and ingredients.
- Expansion of selling doors and square footage space in retail.
- International expansion into China and direct-to-consumer in Europe.

Purpose in Everything We Do

We have built a special culture at Amyris where our strategy and day-to-day decisions are informed by our No Compromise promise to create solutions that are natural, sustainably sourced, and better for people and the planet without compromise to performance—we deliver the best performing products while seeking to support our planet.

We believe there is nothing more important than the wellbeing of our people and are proud to have achieved excellent safety results in 2020, despite the many challenges that COVID presented. We sustained a very low incident record overall in 2020 without any major accidents despite a significant increase in overall hours worked. Our strict safety protocols allowed us to continue operations without interruption in 2020.

In 2020, we secured Bonsucro chain of custody certification. The Bonsucro Standard ensures that sustainability is traceable along the sugarcane supply chain from farmer to end-user providing clarity and credibility to our consumers and customers that we produce products using sustainable, ethical and fair-trade practices.

We also embrace the principles of diversity, equity and inclusion as reflected by the backgrounds and perspectives of our board, leadership team and our people. In addition, we remained focused on having a positive social impact as an organization through our commitment to equitable treatment, a better planet, and offering natural, sustainably sourced, products.

Accelerating Momentum, Putting Strategic Priorities to Action

We are excited about the opportunities that lie ahead. In 2021, we are focused on leveraging the momentum in our business and continuing to execute on our strategic priorities.

We believe we have the most effective synthetic biology platform in the world, and we differentiate by hardwiring product development to scale up and manufacturing highly engineered chemistry. We continuously add new ingredients to our development pipeline and are commercializing new ingredients at a faster pace than ever before. We delivered six new ingredients in 2020. We have a clear roadmap for the year ahead and intend to continue to lead the biotechnology sector in revenue growth.

Consumers are demanding natural products that are clean and sustainably sourced. This is true for all consumer goods, including beauty, personal care, health and nutrition markets. We deliver better performing molecules at a lower cost and sustainably sourced. This is our No Compromise promise for customers and consumers that is delivering industry-leading growth and margins.

To make the world sustainable, our company needs to be sustainable. The simplification and growth of our portfolio and our continued focus on operational performance are enabling us to become one of the first companies in our sector to become financially self-sustaining.

I would like to thank our shareholders for their support, our customers for their partnership and our employees for their continued commitment to innovation, growth and execution to unlock the full potential of Amyris. We look forward to continuing on this journey together with you and sharing our accomplishments along the way. I wish everyone continued safety and good health.

Sincerely,

John G. Melo
President and Chief Executive Officer

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Notice of 2021 Annual Meeting of Stockholders

Annual Meeting of Stockholders

Date and Time:
Friday, May 28, 2021,
2:00 p.m. Pacific Time

Location:
Virtual Meeting:
www.proxydocs.com/AMRS

Record Date:
Thursday, April 1, 2021

Mail Date:
Notice of Internet Availability of Proxy Materials ("Notice") will be mailed on or about April 14, 2021

Voting Matters

At or before the 2021 Annual Meeting of Stockholders ("Annual Meeting"), we ask that you vote on the following items:

Item 1 Election of four Class II Directors to serve for a three-year term

Item 2 Ratification of the appointment of Independent Registered Public Accounting Firm

Item 3 Approval of Amended and Restated 2010 Employee Stock Purchase Plan

Item 4 Approval of amendment to Certificate of Incorporation to increase authorized shares

Important Notice Regarding the Availability of Proxy Materials for the Annual Meeting: our Proxy Statement and 2020 Annual Report are available free of charge on our website at **https://investors.amyris.com/annual-reports**

How to Vote:

Internet

Visit www.proxydocs.com/AMRS and use your unique control number found in your Notice, proxy card or voting instruction form to access the voting site

Mail

Complete and sign the proxy card or voting instruction form and return it by mail.

Telephone

Follow the telephone instructions provided in your Notice, proxy card or voting instruction form.

During the Meeting

This year's Annual Meeting of Stockholders will be virtual. For details on how to pre-register and attend the virtual meeting or on how to vote your shares during the virtual meeting, see p. 74, "*Questions and Answers about the Annual Meeting and Voting.*"

We are using the Internet as our primary means of furnishing proxy materials to our stockholders, instead of mailing printed copies. By doing so, we save costs and reduce our impact on the environment. We will instead mail or otherwise make available to each of our stockholders a Notice of Internet Availability of Proxy Materials, which contains instructions on how to access our proxy materials, and vote, online. The Notice also provides information on how stockholders can obtain paper copies of our proxy materials.

These proxy materials are provided in connection with the solicitation of proxies by the Board of Directors (the "Board") of Amyris, Inc., a Delaware corporation (referred to as "Amyris", the "Company", "we", "us", or "our"), for our Annual Meeting. These proxy materials were first sent on or about April 14, 2021 to stockholders entitled to vote at the Annual Meeting.

Your vote is important, regardless of the number of shares of our stock that you own. Whether or not you plan to attend our virtual Annual Meeting, it is important that your shares are represented and voted. We encourage you to submit your proxy as soon as possible by internet, by telephone, or by signing and returning all proxy cards or instruction forms provided to you.

By Order of the Board of Directors

Nicole Kelsey
General Counsel and Secretary
April 12, 2021

Amyris, Inc.
5885 Hollis Street, Suite 100
Emeryville, California 94608

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PROXY

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Sustainability at Amyris

Amyris is deeply committed to sustainability and to protecting the abundance and beauty of nature. Our mission is to move the world to use sustainable ingredients. At the heart of what we do is chemistry. By modifying the genetics of yeast strains and fermenting them in sugarcane syrup, we have pioneered the ability to convert basic plant sugars to hydrocarbon molecules. We use what is renewable to recreate what is finite.

Our technology platform enables us to produce rare, natural molecules that are integral to medications, health, personal care and beauty products that are both safe and effective. Our platform provides a scalable way forward in a world where humanity's demand for the earth's bounty far exceeds its supply. We do all of this without compromise—to quality, cost and to sustainability. We stand on one principle in everything we do: Make good. No compromise.®

Amyris is a high-growth synthetic biotechnology company, leading the industry in the Clean Health and Beauty markets through our growing portfolio of consumer brands and as a top supplier of sustainable and natural ingredients. We have successfully developed 13 unique ingredients which are now available in the commercial market, and we have 18 ingredients in development in our labs. Our proprietary Lab-to-Market synthetic biotechnology platform optimizes learning cycles, accelerates our time to market, improves our predictive success, and reduces cost.

Consistent with our mission, we view Environmental, Social, and Governance ("ESG") factors as long-term value drivers for our customers, our Company and all of our stakeholders including our stockholders.

ENVIRONMENTAL STEWARDSHIP

Sustainable Ingredients
Environmental Impact
Carbon Footprint

SOCIAL RESPONSIBILITY

Human Capital Management
Health & Safety
Community Investment
Supplier Sustainability

CORPORATE GOVERNANCE

Governance Practices
Ethics & Integrity
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ENVIRONMENTAL STEWARDSHIP

Sustainable Ingredients

Environmental sustainability through science and manufacturing is at the core of Amyris. Our synthetic biotechnology platform gives us the ability to make readily available molecules that traditionally come from finite agricultural, animal or petrochemical resources.

Our novel approach to replacing scarce plant and animal molecules with clinically-derived solutions enables us to go from scarcity to abundance, privilege to right, dependence to autonomy.

Environmental Impact and Carbon Footprint

Mission statement: to work with our communities, suppliers and partners to minimize our carbon footprint globally by reducing our requirements for energy and natural resources, manufacturing renewable products, effectively recycling our wastes and byproducts, and responsibly managing our technology.

In support of our mission, our policy is to:

- Ensure that our products and operations comply with existing environmental and labor laws
- Develop products that are sustainably sourced and manufactured
- Conduct our operations in a manner that is committed to recycling, conserving natural resources, and protecting our environment from pollution
- Responsibly manage the use of all of our materials to preserve the health of local ecosystems
- Use metrics to assess our energy dependencies and identify ways to reduce our carbon footprint and greenhouse gas emissions
- Promote environmental and social responsibility among our employees through company initiatives, recognition and events
- Endeavor to work only with suppliers and distributors who share our commitment to sustainable management practices

In 2019 and 2020, we achieved the following:

- Achieved **My Green Lab Platinum Certification** of our laboratories, a global standard for laboratory sustainability best practices relating to waste, recycling, storage, and energy use
- Achieved **carbon neutral shipping**
- Exceeded target of 90% **hazardous material waste** recycled or repurposed
- Joined the **United Nations Global Compact**
- Launched *The Clean Academy Impact Awards* to provide monetary **awards for ocean conservation** projects and promote education around conservation and social impact
- Established partnerships and made **donations** to support ocean conservation, hunger relief, diabetes research and the safety and health of frontline health workers

Awards: Our commitment to environmental stewardship continues to earn us external recognition. Below is a selection of the awards and recognition we received over the past year:

Bonsucro certification of sustainable sugarcane production

#23 in Real Leaders 2021 Social and Environmental Impact Awards

No. 1 Hottest Company in the Advanced BioEconomy in 2021, BioDesign and Engineering category; Top 5 Renewable Chemicals and Materials category

100 Greatest Innovations of 2020 (33rd Annual Popular Science Best of What's New Awards)

purecane

POPULAR SCIENCE

SOCIAL RESPONSIBILITY

Human Capital Management

Our Board believes that human capital management, including Diversity, Equity, and Inclusion ("DEI") initiatives, are important to our success. In February 2019, the Legal Team created its own DEI Initiative to raise awareness around DEI matters within the Company and to reinforce the importance of diverse staffing on its legal matters by the Company's outside counsel. In August 2020, we appointed to our Board Julie Washington, a Black executive with transformational marketing leadership experience. She was subsequently appointed to the Leadership, Development, Inclusion and Compensation Committee of the Board ("LDICC"). The Board expanded the remit of the LDICC in 2020 to include oversight of DEI matters, renaming the Committee to add the word "Inclusion." We conduct an employee engagement survey on an annual basis and the results of these surveys are discussed with the LDICC.

Amyris is committed to enhancing the diversity of our workforce and promoting a culture of acceptance and equality throughout the organization.

- **A Diverse Workforce:** Our diversity makes us stronger. We strengthen the value we create as a company when we bring a broad-based workforce together to achieve our goals.
- **Promoting Inclusion:** We promote employee affiliation groups focused on specific diverse

needs of our workforce, and provide information about these diverse groups to educate and promote awareness of their diversity as efforts to create an inclusive environment for their development at Amyris.
- **Equal Pay for Equal Work:** We believe in compensating our employees fairly and equitably. We have instituted practices to ensure salary transparency, our management is guided on the principle of pay equity, and our compensation structures by job level and geographical market are available to all employees.

In 2020, we engaged a third party consultant to conduct a company-wide DEI Climate Survey. Our leadership used the feedback to better understand the strengths and challenges of Amyris and to inform our DEI strategic plan in furtherance of a more welcoming, inclusive, and equitable organization. We closed 2020 by introducing a new learning series for all employees to help increase understanding of issues like unconscious bias, micro-aggressions, social identities and privilege, and effective allyship. This learning has been continuing in 2021 and will continue as a core element of our culture.

We have over 600 employees in the United States, Brazil and Portugal.

- 49% of our U.S. employees are People of Color
- 50% of our employees are Women
- 45% of our Executive Leadership Team is Women

We have the following employee affiliation groups that are organized around diversity attributes:

- W.E.E. (Women Empowering Each Other)
- Out@Amyris (Lesbian, Gay, Bisexual, Transgender, Queers and Others on Gender and Sexuality Spectrum)
- BIPOC (Black, Indigenous, and People of Color)

Health and Safety

Safety is an Amyris core value which means that maintaining a safe and healthy work environment for our people, as well as our communities, resources, and planet, is our highest priority. We have a Safety Committee that is responsible for developing, promoting, and maintaining safety policies and procedures. We provide customized environmental health and safety training, carry out regular facility audits, assist employees with risk assessments, promote waste management and reduction practices, provide recommended personal protective equipment and offer a robust ergonomics program in compliance with CAL-OSHA and the California Department of Public Health.

COVID-19 Response

The global COVID-19 pandemic has caused us to take both a short-term and a long-term view of ESG risks and opportunities.

Since early 2020, we have closely monitored the impact of the global COVID-19 pandemic on all aspects of our business, including its impact on our employees, partners, supply chain, and distribution network. Since the start of the pandemic in early 2020, we developed a comprehensive response strategy including establishing a cross-functional COVID-19 Task Force and implementing business continuity plans to manage the impact of the COVID-19 pandemic on our employees and our business. We have applied recommended public health strategies designed to prevent the spread of COVID-19 and have been focused on the health and welfare of our employees. We have successfully managed to sustain ongoing critical production campaigns and infrastructure while staying in compliance with public health orders.

We have initiated several precautions in accordance with local regulations and guidelines to mitigate the spread of COVID-19 infection across our businesses, which has impacted the way we carry out our business, including additional sanitation and cleaning procedures in our laboratories and other facilities, on-site COVID-19 testing, temperature and symptom confirmations, instituting remote working when possible, and implementing social distancing and staggered worktime requirements for our employees who must work on-site. For employees working remotely, we have rolled out new technologies and collaboration tools as well as provided financial support for ergonomic workstations at home. Our plans to reopen our sites and enable a broad return to work in our offices, laboratories and production facilities will continue to follow local public health plans and guidelines. As the effects of the COVID-19 pandemic and the availability of vaccines continue to rapidly evolve, even if our employees more broadly return to work in our offices, laboratories, and production facilities, we have the flexibility to resume more restrictive on-site and remote work models, if needed, as a result of spikes or surges in COVID-19 infection, hospitalization rates or otherwise.

In addition, the rapid spread of COVID-19 has caused a significant burden on health systems globally and has highlighted the need for companies to innovate and develop new technologies and therapies. To that end, in April 2020, we rapidly launched a new plant-derived hand sanitizer under our Pipette brand to help fight COVID-19 spread. We made donations of our sanitizer to frontline healthcare workers at numerous hospitals in our community and throughout the United States. In addition, we accelerated our research and development of a sustainable alternative to shark squalene adjuvant currently used in a number of vaccines, including vaccines in development to treat COVID-19.

Community Investment

In support of our communities, Amyris and our employees devote significant time and resources to outreach, such as participating in a variety of donation drives and environmental cleanup efforts. Since the beginning of 2020, our scientists have been volunteering every month to teach STEM lessons to schools in our communities which often includes one-on-one mentoring by our scientists. In 2020, we established the Amyris Annual Scholarship Fund to fund academic scholarships to Black students at historically black colleges and universities ("HBCUs") and local San Francisco Bay Area universities, in order to support future scientists and innovators early in their careers. Additionally, in the summer of 2020, half of our student interns were Black, representing an HBCU or a local university. In January 2021, the Legal Team formalized its activities supporting the Company's local communities with its Legal Gives Back Initiative.

Supplier Sustainability

We require our suppliers to conduct their businesses in alignment with our Supplier Code of Conduct, which contains specific standards on labor and human rights, business ethics, environmental sustainability, social responsibility, privacy, security, and intellectual property. The Supplier Code of Conduct is posted on our website and is part of our overall legal and compliance program. Failure by any of our suppliers to comply with our Supplier Code of Conduct may result in termination of our business relationship with such supplier. We have a global reporting channel for any ethical concerns or violations for our employees and our supply chain.

CORPORATE GOVERNANCE

We are committed to a strong governance program, and our practices are designed to maintain high standards of oversight, compliance, integrity, and ethics. Each year, we review our corporate governance policies, compliance policies and procedures, and compensation practices and policies to ensure they are consistent with evolving market practices and trends and the promotion of long-term stockholder value.

Governance Practices

Our Board has adopted written Corporate Governance Principles to provide the Board and its Committees with operating principles designed to enhance the effectiveness of the Board and its Committees, to maintain high standards of Board and Committee governance, and to clarify the responsibilities of management in supporting the Board's activities. The Corporate Governance Principles set forth a framework for Amyris's governance practices, including composition of the Board and its Committees, functions and responsibilities of the Board and its Committees, director nominee selection, Board membership criteria, director compensation, Board education, meeting responsibilities, access to information and employees, executive sessions of independent directors, and responsibilities of management vis-à-vis the Board and its Committees.

Corporate Governance Strengths

Strong independent oversight	Board qualifications and accountability	Board oversight of strategy and risk management
▪ 9 out of 11 directors are independent	▪ Diverse Board in terms of tenure, gender, race/ethnicity, experience and skills	▪ Risk oversight by the full Board and Committees
▪ Independent Board Chairman and independent Board Committees	▪ Annual Board and Committee self-evaluation	▪ Independent compensation program risk analysis and reporting directly to the LDICC
▪ Executive sessions of independent directors	▪ No poison pill anti-takeover defenses	▪ Offsite Board strategy sessions

Ethics & Integrity

Integrity is another one of our core values. We strive to be honest, ethical, and deal fairly with each other and our third parties, holding ourselves accountable and delivering on our commitments. We maintain a robust compliance program that includes a Code of Business Conduct and Ethics that applies to all directors, officers, employees, consultants, agents and contractors of Amyris as required by The Nasdaq Stock Market ("Nasdaq") governance rules. Our Code of Business Conduct and Ethics includes a section entitled "Code of Ethics for Chief Executive Officer and Senior Financial Officers," providing additional principles for ethical leadership and a requirement that such individuals foster a culture throughout Amyris that helps ensure the fair and timely reporting of our financial results and condition. Our Code of Business Conduct and Ethics is available on the corporate governance section of our website at https://investors.amyris.com/corporate-governance.

Stockholders may also obtain a printed copy of our Code of Business Conduct and Ethics and our Corporate Governance Principles by writing to the Secretary of Amyris at 5885 Hollis Street, Suite 100, Emeryville, California 94608. If we make any substantive amendment to a provision of our Code of Business Conduct and Ethics that applies to our principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions, or if we grant any waiver from any of such provisions to any such person, we will promptly disclose the nature of the amendment or waiver on the corporate governance section of our website at https://investors.amyris.com/corporate-governance.

ESG Strategy & Oversight

In 2020, we created our first Chief Engagement & Sustainability Officer ("CESO") position. Our CESO is responsible for framing the ESG issues and goals in strategic terms, leading systemic ESG improvements, and communicating the strategic direction for the Company's objectives. As part of our ongoing identification and assessment of ESG risks and opportunities, Amyris has initiated a materiality and gap analysis utilizing frameworks including those of the Sustainability Accounting Standards Board and Global Reporting Initiative. In addition, our CESO has engaged a cross-functional team consisting of members of finance, supply chain, quality, research and development, human resources, and legal, and the Company expects to publish its first ESG Report in 2021. Our Secretary reports on the status of certain ESG activities and disclosures to the Nominating & Governance Committee ("NGC") of the Board on a bi-annual basis, and our CESO intends to present our first ESG Report to the Board in the second half of 2021.

Proposal 1

Election of Directors

Nominees for Election to the Board of Directors

Under our Certificate of Incorporation and Bylaws, the number of authorized Amyris directors has been fixed at 12, and the Board is divided into the following three classes with staggered three-year terms:

- Class I directors, whose term will expire at the annual meeting of stockholders to be held in 2023;
- Class II directors, whose term will expire at this 2021 Annual Meeting of stockholders and who have been nominated for re-election; and
- Class III directors, whose term will expire at the annual meeting of stockholders to be held in 2022.

In accordance with our Certificate of Incorporation, the Board has assigned each member of the Board to one of the three classes, with the number of directors in each class divided as equally as reasonably possible. As of the date of this Proxy Statement, there are four Class I seats, four Class II seats, and three Class III seats (with one vacancy) constituting the 12 seats on the Board.

At the 2021 Annual Meeting, we are asking our stockholders to vote on the election of four Class II directors, Philip Eykerman, Frank Kung, John Melo, and Julie Washington, to serve until our 2024 annual meeting. The nominees are all current directors of Amyris.

Vote Required and Board Recommendation

Directors are elected by a plurality of the votes present in person or represented by proxy at the meeting and entitled to vote. This means that the four Class II nominees receiving the highest number of affirmative (i.e., "For") votes will be elected. At the Annual Meeting, proxies cannot be voted for a greater number of persons than the four nominees named in this Proposal 1 and stockholders cannot cumulate votes in the election of directors. Shares represented by executed proxies will be voted by the proxy holders, if authority to do so is not withheld for any or all of the nominees, "For" the election of the four nominees named below. If any nominee is unable or declines to serve as a director at the time of the meeting, the proxies will be voted for a nominee, if any, designated by the Board to fill that vacancy. As of the date of this Proxy Statement, the Board is not aware that any nominee up for election is unable or will decline to serve as a director. If you hold shares through a broker, bank or other custodian, nominee, trustee or fiduciary (an "Intermediary"), you must instruct your Intermediary of record how to vote so that your vote can be counted on this proposal. Broker non-votes will not count toward the vote total for this proposal and therefore will not affect the outcome of this proposal.

The Board recommends a vote "FOR" each nominee.

Director Biographies

Nominees for Class II Directors for a Term Expiring in 2024

Director since 2017

Age 52

Board Committees
None

Other Current Public Directorships
None

Philip Eykerman

Mr. Eykerman has served as the Executive Vice-President, Corporate Strategy & Acquisitions of Koninklijke DSM N.V. (together with its affiliates, "DSM"), a global science-based company in nutrition, health and sustainable living and an entity with which Amyris has a commercial and financial relationship and which is an owner of greater than five percent of the Company's outstanding common stock, since 2011. In 2015, he was also appointed as a member of the DSM Executive Committee and at present is also responsible for the DSM Food Specialties as well as DSM Hydrocolloids activities. Since September 2020, he is also appointed to President Human Nutrition & Health, thereby now managing/ overseeing all the group's activities in human nutrition & health while maintaining the responsibility for the DSM Mergers & Acquisitions activities. Next to these roles within DSM, he is also a Supervisory Board member of ChemicaInvest (DSM/CVC JV), AnQore TopCo B.V., and AOC Aliancys (DSM/CVC JV), and previously served as a member of the Supervisory Board of Patheon N.V. from March 2014 to August 2017. Before joining DSM, Mr. Eykerman worked for 14 years at McKinsey & Company of which the last 9 years as a Partner and leader of McKinsey's Cemicals Practice in the Benelux and France. Before that, he worked as a process/ project engineer for Fluor Daniel. He holds a Master's degree in Chemical Engineering from the KU Leuven (Belgium), and a Master's degree in Refinery Engineering from the Institut Francais du Pétrole (France).

Key Qualifications

Mr. Eykerman's experience in corporate strategy, mergers and acquisitions and operations enables him to provide insight to the Board regarding potential new opportunities for Amyris.

Director since 2017

Age 72

Board Committees
Operations & Finance Committee

Other Current Public Directorships
None

Frank Kung

Dr. Kung is a founding member of Vivo Capital LLC ("Vivo"), a healthcare focused investment firm founded in 1996 in Palo Alto, California, whose fund under management is an owner of greater than five percent of the Company's outstanding common stock. Dr. Kung started his career in the biotechnology industry in 1979 when he joined Cetus Corporation. He later co-founded Cetus Immune Corporation in 1981, which was acquired by its parent company in 1983. In 1983, he co-founded Genelabs Technologies, Inc. where he served as Chairman and CEO until 1995. During his tenure in Genelabs, he brought the company public in 1991, and built it to a 175 employee international biotech company with operations in the United States, Belgium, Singapore, Switzerland and Taiwan. Dr. Kung holds a Bachelor of Science degree in chemistry from the National Tsing Hua University in Taiwan, and a Doctor of Philosophy degree in molecular biology and a Master of Business Administration degree from the University of California, Berkeley. Dr. Kung currently serves on the board of directors of a number of healthcare and biotechnology companies.

Key Qualifications

Dr. Kung's experience in healthcare and biotechnology and investing in companies enables him to provide the Board and management with guidance regarding the Company's business strategy and access to financial markets.

Director since 2007

Age 55

Board Committees
None

Other Current Public Directorships
None

John Melo

Mr. Melo has nearly three decades of combined experience as an entrepreneur and thought leader in the global fuels industry and technology innovation. Mr. Melo has served as our CEO and a director since January 2007 and as our President since June 2008. Before joining Amyris, Mr. Melo served in various senior executive positions at BP Plc (formerly British Petroleum), one of the world's largest energy firms, from 1997 to 2006, most recently as President of U.S. Fuels Operations. During his tenure at BP, Mr. Melo also served as Chief Information Officer of the refining and marketing segment, Senior Advisor for e-business strategy to Lord Browne, BP Chief Executive, and Director of Global Brand Development. Before joining BP, Mr. Melo was with Ernst & Young, an accounting firm, and a member of the management teams of several startup companies, including Computer Aided Services, a management systems integration company, and Alldata Corporation, a provider of automobile repair software to the automotive service industry. Mr. Melo currently serves on the board of directors of Renmatix, Inc., the Industrial and Environmental section of the Biotechnology Innovation Organization, and the California Life Sciences Association. Mr. Melo was formerly an appointed member to the U.S. section of the U.S.-Brazil CEO Forum.

Key Qualifications

Mr. Melo's experience as a senior executive at one of the world's largest energy companies provides critical leadership in shaping strategic direction and business transactions, and in building teams to drive innovation, and as our CEO of over 10 years, he brings to our Board a deep and comprehensive knowledge of our business as well as shareholder-focused insight into effectively executing the Company's strategy and business plans to maximize shareholder value.

Director since 2020

Age 55

Board Committees
Leadership, Development, Inclusion & Compensation Committee

Other Current Public Directorships
None

Julie Spencer Washington

Ms. Washington has served as Chief Marketing, Communications & Customer Experience Officer of Trinity Health, a Catholic health care delivery system, since January 2020. She previously served as Chief Marketing Officer of Champion Petfoods from 2017 to 2019 and held a number of executive positions at Jamba Juice from 2010 to 2016, including as Chief Marketing & Innovation Officer and prior to that, as Chief Brand Officer and Vice President and as General Manager, Consumer Products. Prior to that, Ms. Washington served in multiple senior leadership positions at Luxottica Retail, Procter & Gamble and Nestlé Purina. She currently serves on the board of directors of Union Institute & University. Ms. Washington holds a Master of Business Administration degree from Washington University, a Bachelor of Arts degree in Chemistry and Psychology from Emory University, and an Executive in Education Certificate on Driving Digital and Social Strategy from Harvard University.

Key Qualifications

Ms. Washington's experience in building and developing high-performing teams, fostering DEI efforts, leading business transformation, and driving sustainable corporate growth enables her to provide the Board management expertise regarding consumer needs and behaviors, market dynamics, and digital trends relevant to the Company's business.

Class I Incumbent Directors with a Term Expiring 2023

Director since 2012

Interim Board Chairman since May 2014

Age 61

Board Committees
Audit Committee
Operations & Finance Committee

Other Current Public Directorships
None

Geoffrey Duyk

Dr. Duyk previously served on the Board from May 2006 to May 2011. Dr. Duyk is a partner of Circularis Partners, a technology focused investment firm. Previously, Dr. Duyk served as a partner and managing director of TPG Alternative & Renewable Technologies (TPG ART), a technology focused investment firm (together with its affiliates, "TPG"), from 2004 to 2017. Prior to TPG, he served on the board of directors and was President of Research and Development at Exelixis, Inc., a biopharmaceutical company focusing on drug discovery, from 1996 to 2003. Prior to Exelixis, Dr. Duyk was Vice President of Genomics and one of the founding scientific staff at Millennium Pharmaceuticals, from 1993 to 1996. Before that, Dr. Duyk was an Assistant Professor at Harvard Medical School in the Department of Genetics and Assistant Investigator of the Howard Hughes Medical Institute. Dr. Duyk currently serves on the boards of directors of: Anuvia Plant Nutrients; Concentric Ag Corporation (interim CEO since 2019); and ReGen Holdings Limited as well as on the nonprofit Case Western Reserve University Board of Trustees. Dr. Duyk is also a member of the Institute Board of Directors of the Moffitt Cancer Center where he chairs the Research and Development committee. He is the Chairman of the board of directors of OncoBay Clinical, a private contract research organization (subsidiary of Moffitt Cancer Center). Dr. Duyk serves as a member of Scientific Advisory Boards for Lawrence Berkeley National Laboratory (DOE) and a member of the Advisory Board of Innovatus Capital Partners. Previously, Dr. Duyk has served on a number of advisory boards, nonprofit, private, and public company boards, including Aerie Pharmaceuticals from August 2005 to June 2017. Dr. Duyk holds a Bachelor of Arts degree in Biology from Wesleyan University and a Ph.D. in Biochemistry and M.D. from Case Western Reserve University.

Key Qualifications

Dr. Duyk's experience with the biotechnology industry enables him to provide insight and guidance to our management team and Board.

Director since 2019

Age 69

Board Committees
Audit Committee
Operations & Finance Committee

Other Current Public Directorships
1-800-FLOWERS.COM, Inc. (Chairman)
International Game Technology PLC

James McCann

Mr. McCann is the founder and Chairman of the board of directors of 1-800-FLOWERS.COM, Inc., a floral and gourmet foods gift retailer and distribution company founded in 1976, and served as chief executive officer of 1-800-FLOWERS.COM, Inc. from 1976 until June 2016. Mr. McCann also serves on the board of directors of International Game Technology PLC (formerly GTECH S.p.A. and Lottomatica Group S.p.A.) and has previously served on the board of directors of Willis Towers Watson PLC (formerly Willis Group Holdings PLC) from 2004 until May 2019 and The Scotts Miracle-Gro Company from 2014 until January 2020.

Key Qualifications

Mr. McCann brings to the Board extensive experience in business leadership and innovation, which enables him to assist in the growth and development of our business.

Director since 2018

Age 65

Board Committees
Audit Committee (Chairman)
Leadership, Development, Inclusion & Compensation Committee
Operations & Finance Committee (Chairman)

Other Current Public Directorships
Black Hills Corporation
Farmers Edge, Inc.

Steve Mills

Mr. Mills has 40 years of experience in the fields of accounting, corporate finance, strategic planning, risk management, and mergers and acquisitions. He served as Chief Financial Officer of Amyris from May 2012 to December 2013. Prior to joining Amyris, Mr. Mills had a 33-year career at Archer-Daniels-Midland Company ("ADM"), one of the world's largest agricultural processors and food ingredient providers. At ADM, he held various senior executive roles, including Chief Financial Officer, Controller, and head of Global Strategic Planning. Since 2013, Mr. Mills has served as a consultant and advisor to clients in the private equity, agribusiness, and financial services fields.
Mr. Mills is currently serving as a consultant and advisor to Arianna S.A., a European specialized investment fund. He also serves on the boards of Black Hills Corporation (where he serves as Chair of the board), Farmers Edge, Inc., Illinois College (where he also serves as the Chairman of the board), First Illinois Corporation (along with its wholly-owned banking subsidiary, Hickory Point Bank & Trust) and Arianna S.A.
Mr. Mills holds a Bachelor of Science degree in Mathematics from Illinois College.

Key Qualifications

Mr. Mills' familiarity with Amyris, as well as his expertise in accounting, finance, and management, enables him to assist our management team and Board build and improve on our business and financial processes and management.

Director since 2009

Age 62

Board Committees
Nominating & Governance Committee
Leadership, Development, Inclusion & Compensation Committee (Chairman)
Operations & Finance Committee

Other Current Public Directorships
Rothschild & Co.
Sanofi

Carole Piwnica

Ms. Piwnica has been director of NAXOS S.A.R.L. (Switzerland), a consulting firm advising private investors, since January 2019 and served as the director of Naxos UK from 2008 to 2018. She served as a director, from 1996 to 2006, and Vice-Chairman of Governmental Affairs, from 2000 to 2006, of Tate & Lyle Plc, a European food and agricultural ingredients company. She was a Chairman of Amylum Group, a European food ingredient company and affiliate of Tate & Lyle Plc, from 1996 to 2000.
Ms. Piwnica was a member of the board of directors of Aviva plc, a British insurance company, from May 2003 to December 2011, a member of the Biotech Advisory Council of Monsanto from May 2006 to October 2009, a member of the board of directors of Dairy Crest from 2007 until 2010, a member of the board of directors of Toepfer Gmbh from 1996 until 2010, a member of the board of directors of Louis Delhaize from 2010 until 2013 and a member of the board of directors of Eutelsat from 2010 until 2019. In 2010, Ms. Piwnica was appointed as a member of the board of Sanofi. In 2014, she was appointed as a member of the board of Rothschild & Co.
Ms. Piwnica holds a Law degree from the Université Libre de Bruxelles and a Master of Laws degree from New York University. She was also a member of the bar association of the state of New York, USA from 1985 until 2019 and was a member of the bar association of Paris, France from 1988 until 2013.

Key Qualifications

Based on her multinational corporate leadership experience and extensive legal and corporate governance experience, Ms. Piwnica contributes guidance to the management team and the Board in leadership of multinational agricultural processing businesses and on legal and corporate governance obligations and best practices.

Class III Incumbent Directors with a Term Expiring in 2022

John Doerr

Director since 2006

Age 69

Board Committees
Nominating & Governance Committee (Chairman)

Other Current Public Directorships
Alphabet Inc.
Bloom Energy Corporation
Door Dash, Inc.
QuantumScape Corporation

Mr. Doerr has been Chairman at Kleiner Perkins Caufield & Byers ("KPCB"), a venture capital firm, since 1980. Mr. Doerr currently serves on the boards of directors of Alphabet Inc., Bloom Energy Corporation, Door Dash, Inc., and QuantumScape Corporation, as well as on the board of directors of numerous private companies, and previously served as a director of Zynga, Inc. from April 2013 to May 2017. Mr. Doerr holds a Bachelor of Science degree and a Master's degree in electrical engineering from Rice University, and a Master of Business Administration degree from Harvard University.

Key Qualifications

Mr. Doerr's global business leadership as general partner of KPCB, as well as his outside board experience as director of several public and private companies, enables him to provide valuable insight and guidance to our management team and the Board.

Lisa Qi

Director since 2019

Age 49

Board Committees
None

Other Current Public Directorships
None

Lisa Qi has been a member of the Board since May 2019. Ms. Qi is the founder and chief executive officer of Silver Gift Limited and Daling Xinchao (Beijing) Trading Co., Ltd., which operate the Daling Family e-commerce platform in China.

Key Qualifications

Ms. Qi brings deep knowledge and significant experience in the areas of e-commerce, product branding, sales and the management of high-growth companies, which enable her to make a strategic contribution to the Board and provide guidance to the management team in these areas.

Director since 2014

Age 72

Board Committees
Leadership, Development, Inclusion & Compensation Committee

Other Current Public Directorships
Codexis, Inc.
PharmaEssentia Corporation
Sana Biotechnology, Inc.

Patrick Yang

Dr. Yang is Executive Vice Chairman of National Resilience, Inc., a biomanufacturing company. He is a biotech industry consultant. He previously served as Executive Vice President of Juno Therapeutics, Inc. (acquired by Bristol-Myers Squibb), a biopharmaceutical company focused on developing innovative cellular immunotherapies for the treatment of cancer, from September 2017 to January 2019. From January 2010 through March 2013, Dr. Yang served as Executive Vice President and Global Head of Technical Operations for F. Hoffmann-La Roche Ltd. ("Roche"), where he was responsible for Roche's pharmaceutical and biotech manufacturing operations, process development, quality, regulatory, supply management and distribution functions. Before joining Roche, Dr. Yang worked for Genentech Inc., where he served as Executive Vice President of Product Operations, and was responsible for manufacturing, process development, quality, regulatory affairs and distribution functions. Prior to joining Genentech Inc., Dr. Yang worked for Merck & Co., where he held several leadership roles including Vice President of Asia/Pacific Manufacturing Operations and Vice President of Supply Chain Management. He also previously worked at General Electric Co. and Life Systems, Inc. Dr. Yang currently serves on the boards of directors of Codexis, Inc., PharmaEssentia Corporation and Sana Biotechnology, Inc., and previously served on the boards of directors of Andeavor (formerly Tesoro Corporation) from December 2010 to September 2018 and Celladon Corporation from March 2014 until May 2015.

Key Qualifications

Dr. Yang's experience with the biotechnology industry and operations enable him to provide insight and guidance to our management team and the Board in these areas.

Arrangements Concerning Selection of Directors

In February 2012, pursuant to a Letter Agreement (the "Letter Agreement") entered into in connection with the sale of our common stock to certain investors including Naxyris S.A. ("Naxyris"), an investment vehicle owned by Naxos Capital Partners S.C.A. ("Naxos"), we agreed to appoint, and to use reasonable efforts consistent with the Board's fiduciary duties to cause the re-nomination by the Board in the future of one person designated by Naxyris to serve as a member of the Board. Pursuant to the Letter Agreement, Naxyris designated Ms. Piwnica (who was already on the Board) to serve as the Naxyris representative on the Board. Naxyris's designation rights terminate upon either a sale of Amyris or Naxyris holding less than 115,340 shares of our common stock. As of March 1, 2021, Naxyris beneficially owned 5,743,038 shares of our common stock, representing approximately 2.2% of our outstanding common stock. Ms. Piwnica holds interests in and is director of NAXOS S.A.R.L., a consulting firm advising private investors. In addition, in April 2019, Ms. Piwnica became the indirect owner of Naxyris through her ownership of Arianna S.A. SICAF-SIF. Ms. Piwnica receives compensation and benefits from both Naxyris and NAXOS S.A.R.L. pursuant to their respective standard compensation policies and practices.

Pursuant to a Stockholder Agreement entered into in May 2017, and subsequently amended and restated in August 2017, in connection with the sale of our Series B 17.38% Convertible Preferred Stock and warrants to DSM (the "DSM Stockholder Agreement"), we agreed to appoint, and to use reasonable efforts consistent with the Board's fiduciary duties to cause the re-nomination by the Board in the future of, two persons designated by DSM to serve as members of the Board. Pursuant to the DSM Stockholder Agreement, DSM initially designated Mr. Eykerman to serve as a DSM representative on the Board and, following the amendment and restatement of the DSM Stockholder Agreement in August 2017, DSM designated Christoph Goppelsroeder to serve as the second DSM representative on the Board. DSM's designation rights terminate, with respect to one designee, at such time as DSM beneficially owns less than 10% of our outstanding common stock and, with respect to both

designees, at such time as DSM beneficially owns less than 4.5% of our outstanding common stock. As of March 1, 2021, DSM beneficially owned 25,122,263 shares of our common stock, representing approximately 9.5% of our outstanding common stock. As a result, Mr. Goppelsroeder stepped down from his position on the Board as of April 1, 2021. Mr. Eykerman, who remains on the Board, is an employee of DSM and receives compensation and benefits from DSM pursuant to its standard compensation policies and practices.

In August 2017, pursuant to a Stockholder Agreement (the "Vivo Stockholder Agreement") entered into in connection with the sale of our common stock, Series D Convertible Preferred Stock and warrants to Vivo Capital LLC ("Vivo"), we agreed to appoint, and to use reasonable efforts consistent with the Board's fiduciary duties to cause the re-nomination by the Board in the future of, one person designated by Vivo to serve as a member of the Board. Pursuant to the Vivo Stockholder Agreement, Vivo designated Dr. Kung to serve as the Vivo representative on the Board. Vivo's designation rights terminate at such time as Vivo beneficially owns less than 4.5% of our outstanding common stock. As of March 1, 2021, Vivo beneficially owned 16,315,362 shares of our common stock, representing approximately 6.2% of our outstanding common stock. Dr. Kung is a founding member of Vivo and receives compensation and benefits from Vivo pursuant to its standard compensation policies and practices.

Mr. Doerr and Dr. Duyk were initially designated to serve on the Board by KPCB and TPG, respectively, pursuant to a voting agreement as most recently amended and restated on June 21, 2010 (Dr. Duyk resigned from the Board in May 2011 and was re-appointed to the Board in May 2012). As of the date of this Proxy Statement, notwithstanding the expiration of the voting agreement upon completion of our initial public offering in September 2010, Mr. Doerr and Dr. Duyk continue to serve on the Board and we expect each of them to continue to serve as a director until his resignation or until his successor is duly elected by the holders of our common stock. Mr. Doerr receives compensation and benefits from KPCB pursuant to its standard compensation policies and practices, and Dr. Duyk retains a carried interest in certain funds managed by TPG.

Independence of Directors

Under the corporate governance rules of Nasdaq, a majority of the members of the Board must qualify as "independent," as affirmatively determined by the Board. The Board and the NGC of the Board consult with our legal counsel to ensure that the Board's determinations are consistent with all relevant securities and other laws and regulations regarding the definition of "independent," including those set forth in the applicable Nasdaq rules. The Nasdaq criteria include various objective standards and a subjective test. A member of the Board is not considered independent under the objective standards if, for example, he or she is, or at any time during the past three years was, employed by Amyris, he or she received compensation (other than standard compensation for Board service) in excess of $120,000 during a period of twelve months within the past three years, or he or she is an executive officer of any organization to which Amyris made, or from which Amyris received, payments for property or services (other than payments arising solely from investments in our securities or payments under non-discretionary charitable contribution matching programs) in the current or any of the past three fiscal years that exceed 5% of the recipient's gross revenues for that year, or $200,000, whichever is more.

The subjective test under the Nasdaq rules for director independence requires that each independent director not have a relationship which, in the opinion of the Board, would interfere with the exercise of independent judgment in carrying out the responsibilities of a director. The subjective evaluation of director independence by the Board was made in the context of the objective standards referenced above. In making independence determinations, the Board generally considers commercial, financial and professional services, and other transactions and relationships between Amyris and each director and his or her family members and affiliated entities.

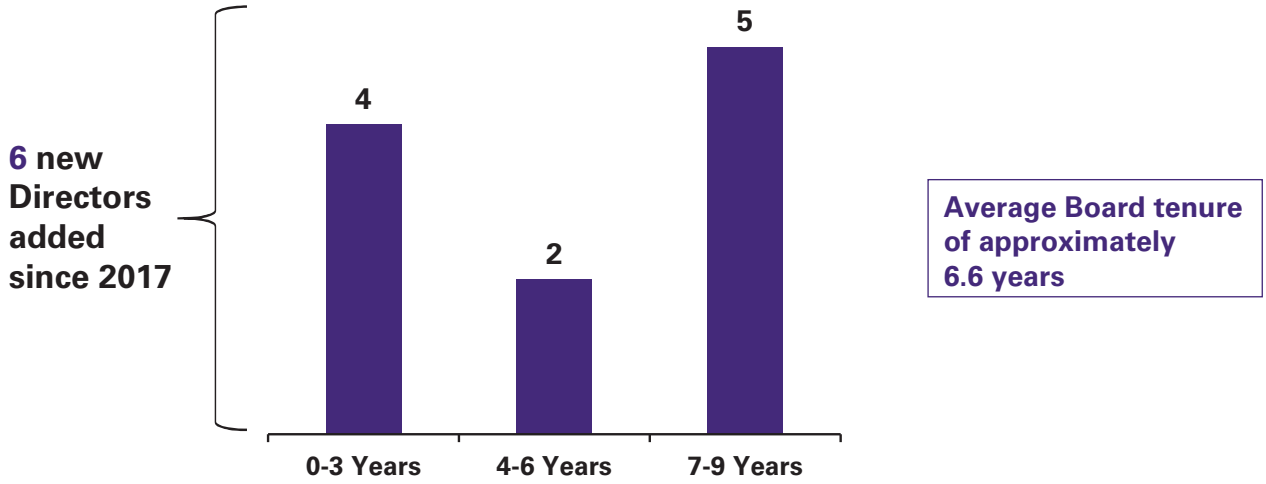
Based on such criteria, the Board determined that (i) Mr. Melo is not independent because he is an Amyris employee and (ii) Mr. Eykerman is not independent because he is an employee of DSM (with which we have commercial and financial relationships, as described below under "Transactions with Related Persons").

For each of the directors other than Messrs. Melo and Eykerman, the Board determined that none of the transactions or other relationships of such directors (and their respective family members and affiliated entities) with Amyris, our executive officers and our independent registered public accounting firm exceeded Nasdaq objective standards and none would otherwise interfere with the exercise of independent judgment in carrying out his or her responsibilities as a director. The following is a description of these relationships:

- Mr. Doerr indirectly owns all of the membership interests in Foris Ventures, LLC ("Foris") and Perrara Ventures, LLC, which beneficially owned 90,615,358 and 3,333,333 shares of our common stock, respectively, representing in the aggregate approximately 35.6% of our outstanding common stock as of March 1, 2021. Mr. Doerr is also a manager of the general partners of entities affiliated with KPCB Holdings, Inc. As of March 1, 2021, KPCB Holdings, Inc., as nominee for entities affiliated with KPCB, held 262,483 shares of our common stock, which represented approximately 0.1% of our outstanding common stock.
- Dr. Kung is a founding member of, and was designated to serve as a director by Vivo. As of March 1, 2021, Vivo beneficially owned 16,315,362 shares of our common stock, representing approximately 6.2% of our outstanding common stock. In addition, Dr. Kung's daughter is a non-executive employee of Amyris.
- Ms. Piwnica was designated to serve as a director by Naxyris. In April 2019, Ms. Piwnica became the indirect owner of 100% of Naxyris through Arianna S.A. SICAF-SIF. As of March 1, 2021, Naxyris beneficially owned 5,743,038 shares of our common stock, representing approximately 2.2% of our outstanding common stock.

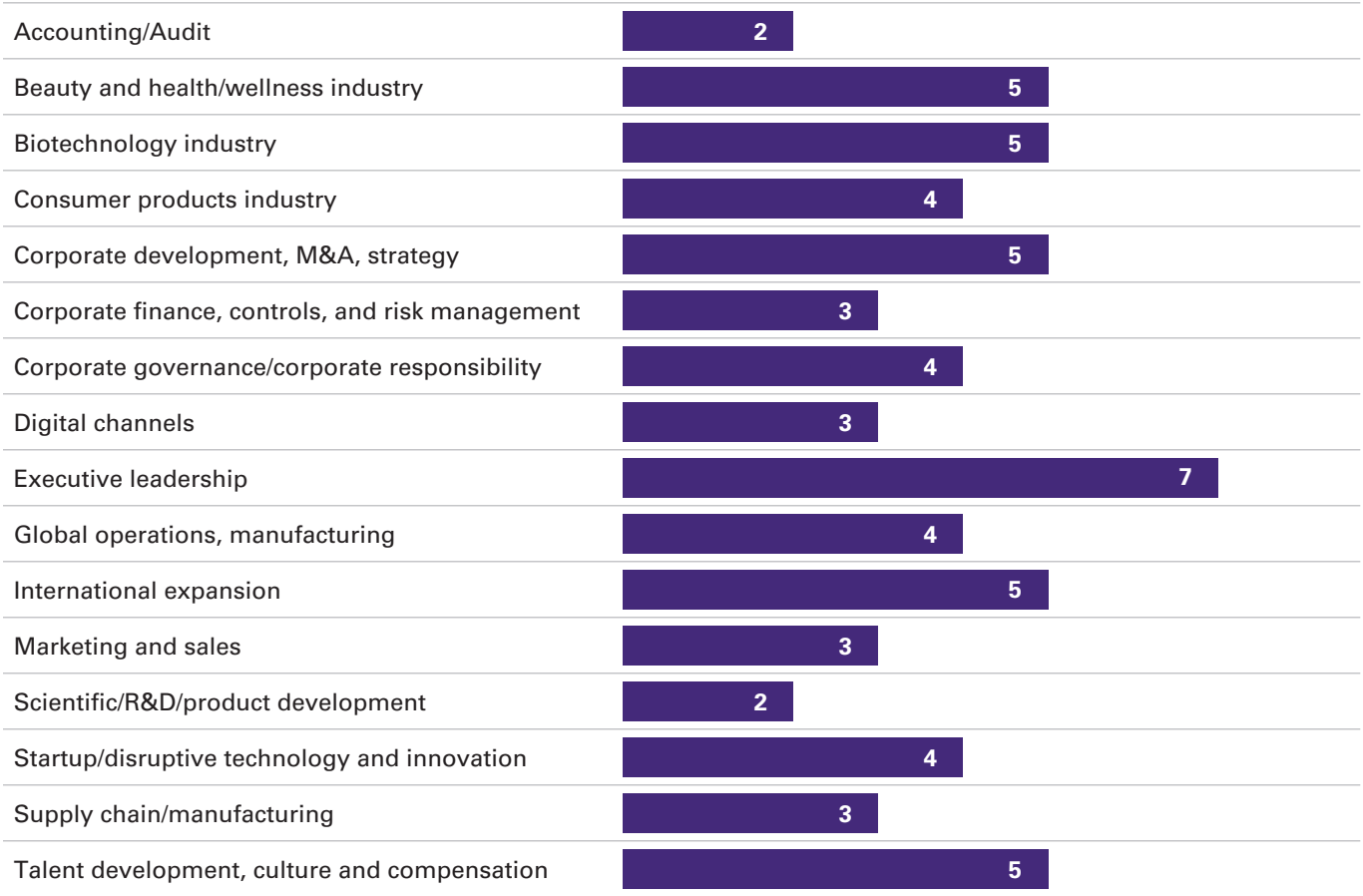
Consistent with these considerations, after a review of all relevant transactions and relationships between each director, any of his or her family members and affiliated entities, Amyris, our executive officers and our independent registered public accounting firm, the Board affirmatively determined that a majority of the Board is comprised of independent directors, and that the following directors are independent: John Doerr, Geoffrey Duyk, Frank Kung, James McCann, Steven Mills, Carole Piwnica, Lisa Qi, Julie Washington, and Patrick Yang.

Board Tenure

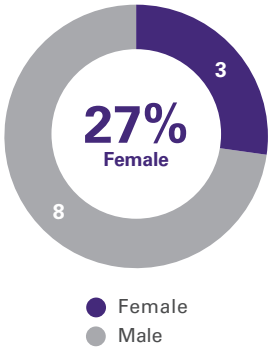


Board Skills and Diversity

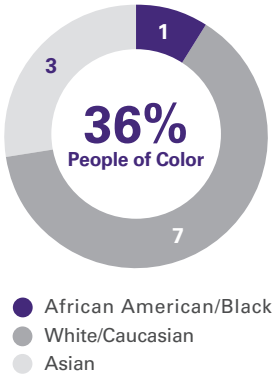
Board Skills, Experience and Attributes



GENDER



ETHNIC DIVERSITY



Board Leadership Structure

The Board is composed of our CEO, John Melo, and ten non-management directors. Geoffrey Duyk, one of our independent directors, currently serves the principal Board leadership role as the interim Board Chairman. The Board does not have any policy that the Board Chairman must necessarily be separate from the CEO, but the Board appointed Dr. Duyk as interim Board Chairman in May 2014 and he continues to serve in this role today. Dr. Duyk's current responsibilities as interim Board Chairman include working with management to develop agendas for Board meetings, calling special meetings of the Board, presiding at executive sessions of independent

Board members, gathering input from Board members after meetings and ensuring that an annual self-assessment process is conducted in order to provide feedback to the Board, its Committees and Committee Chairmen, and the CEO, as appropriate, and serving as CEO in the absence of another designated CEO. The Board believes that having an independent Board Chairman helps reinforce the Board's independence from management in its oversight of our business and affairs. In addition, the Board believes that this structure helps to create an environment that is conducive to objective evaluation and oversight of management's performance and related compensation, increasing management accountability and improving the ability of the Board to monitor whether management's actions are in our best interests and those of our stockholders. Further, this structure permits our CEO to focus on the management of our day-to-day operations. Accordingly, we believe our current Board leadership structure contributes to the effectiveness of the Board as a whole and, as a result, is the most appropriate structure for us at the present time.

Board Committees and Meetings

The Board has established an Audit Committee, a LDICC, an NGC and an Operations and Finance Committee ("Operations Committee"), each as described below. Members are appointed by the Board to serve on these Committees until their resignations or until otherwise determined by the Board. A copy of each Committee's charter can be found on our website at https://investors.amyris.com/corporate-governance.

During 2020, the Board held five meetings, and its four standing Committees during 2020 (the Audit Committee, LDICC, NGC and Operations Committee) collectively held 25 meetings. With the exception of Ms. Piwnica, each incumbent director attended at least 75% of the meetings of the Board and of the Committees on which such director served that were held during the period that such director served in 2020. The Board's policy is that directors are encouraged to attend our annual meetings of stockholders. No directors attended our 2020 annual meeting of stockholders.

The following table provides membership for the Board and its standing committees in 2020:

	Independent Director	Audit Committee	Nominating and Governance Committee	Leadership, Development, Inclusion and Compensation Committee	Operations and Finance Committee
Geoffrey Duyk M.D., Ph.D	●	●			●
James McCann	●	●			●
Steve Mills	●	■		●	■
Carole Piwnica	●		●	■	●
John Doerr	●		■		
Dr. Frank Kung	●				●
Patrick Yang Ph.D.	●			●	
Julie Spencer Washington	●			●	

■ Chair ● Member

Outlined below are brief descriptions of each standing Committee roles and responsibilities.

Audit Committee

Current members:
Steve Mills (Chairman)
Geoffrey Duyk
James McCann

Others who served in 2020:
Neil Williams (resigned from Board in May 2020)

Number of meetings held in 2020: 7

The Board has determined that each member of the Audit Committee is independent (as defined in the relevant Nasdaq and Securities and Exchange Commission ("SEC") rules and regulations), and is financially literate and able to read and understand fundamental financial statements, including a company's balance sheet, income statement and cash flow statement.

In addition, the Board has determined that Mr. Mills is an "audit committee financial expert" as defined in Item 407(d)(5)(ii) of Regulation S-K promulgated under the Securities Act of 1933, as amended (the "Securities Act"), with employment experience in finance and accounting and other comparable experience that results in his financial sophistication.

Role and Responsibilities

The Audit Committee assists the Board in fulfilling the Board's oversight of our accounting and system of internal contols, the quality and integrity of our financial reports, legal and regulatory matters, and the retention, independence and performance of our independent registered public accounting firm.

The Audit Committee performs, among others, the following functions:

- oversees our accounting and financial reporting processes and audits of our consolidated financial statements and disclosure thereof;
- oversees our relationship with our independent auditors, including appointing or changing our independent auditors and ensuring their independence;
- monitors our risk assessment and management, and compliance with legal and regulatory requirements;
- reviews and approves the audit and permissible non-audit services to be provided to us by our independent auditors;
- facilitates communication among our independent auditors, our financial and senior management, and the Board;
- monitors the periodic reviews of the adequacy of our accounting and financial reporting processes and systems of internal control that are conducted by our independent auditors and our financial and senior management; and
- oversees management's plans and objectives for Amyris's capitalization and reviews and approves new offerings of debt, equity or hybrid securities, stock splits, and credit agreements, as well as minority investments by Amyris.

The Audit Committee also reviews and approves any proposed transaction between Amyris and any related party, establishes procedures for the receipt, retention and treatment of complaints received by Amyris regarding accounting, internal accounting controls or auditing matters, and together with the Secretary and Compliance Officer, for the confidential, anonymous submission by Amyris employees of their concerns regarding suspected violations of laws, governmental rules or regulations, accounting, internal accounting controls or auditing matters, or company policies (including the administration of our whistleblower policy), and in coordination with the Secretary, oversees the review of any complaints and submissions received through the complaint and anonymous reporting procedures.

Nominating & Governance Committee

Current members:
John Doerr (Chairman)
Carole Piwnica

Number of meetings held in 2020: 4

The Board has determined that each member of the NGC is independent (as defined in the relevant Nasdaq and SEC rules and regulations).

Role and Responsibilities

The NGC ensures that the Board is properly constituted to meet its fiduciary obligations to stockholders and Amyris, and to assist the Board with respect to corporate governance matters, including:

- identifying, considering and nominating candidates for membership on the Board;
- developing, recommending and periodically reviewing corporate governance guidelines and policies for Amyris (including our Corporate Governance Principles, Code of Business Conduct and Ethics and Insider Trading Policy);
- overseeing the evaluation of the Board and its committees; and
- advising the Board on corporate governance and Board performance matters, including recommendations regarding the structure and composition of the Board and Board Committees.

The NGC also monitors the size, structure and composition of the Board and its Committees and makes any recommendations to the Board regarding improvements to each Committee's operations (including Committee reports to the Board), and structure (including member qualifications, appointment and removal), reviews our narrative disclosures in SEC filings regarding the director nomination process, director qualifications, Board leadership structure and risk oversight by the Board, considers and approves requested waivers for our directors or executive officers under our Code of Business Conduct and Ethics, reviews and makes recommendations to the Board regarding formal procedures for stockholder communications with members of the Board, and oversees an annual self-assessment process for the Board.

Leadership, Development, Inclusion & Compensation Committee

Current members:
Carole Piwnica (Chairman)
Steve Mills
Patrick Yang
Julie Washington

Number of meetings held in 2020: 8

The Board, after consideration of all factors specifically relevant to determining whether any of Mr. Mills, Ms. Piwnica, Dr. Yang, or Ms. Washington has a relationship to Amyris that is material to that director's ability to be independent from management in connection with the duties of a LDICC member, including, but not limited to, (i) the source of compensation of such director, including any consulting, advisory or other compensatory fee paid by Amyris to such director and (ii) whether such director is affiliated with Amyris, has determined that each member of the LDICC is independent (as further defined in the relevant Nasdaq and SEC rules and regulations).

Role and Responsibilities

The purpose of the LDICC is to provide guidance and periodic monitoring for all of our compensation, benefits and equity programs. The LDICC, through delegation from the Board, has principal responsibility to evaluate, recommend, approve, and review executive officer and director compensation arrangements, plans, policies and programs maintained by Amyris and to administer our cash-based and equity-based compensation plans, and may also make recommendations to the Board regarding the Board's remaining responsibilities relating to executive compensation. The LDICC discharges the responsibilities of the Board relating to compensation of our executive officers, and, among other things:

- reviews and approves the compensation of our executive officers;
- reviews and recommends to the Board the compensation of our non-employee directors;
- reviews and recommends to the Board the terms of material amendments to equity compensation agreements in which our executive officers may participate;
- reviews and approves the terms of cash-based compensation agreements with our executive officers;
- administers our stock and equity incentive plans;
- reviews and makes recommendations to the Board with respect to incentive compensation and equity incentive plans other than as described above;
- establishes and reviews our overall compensation strategy;
- reviews with our CEO and Board leadership the succession plans for the executive officers; and
- oversees human capital management and DEI strategies and practices.

Operations & Finance Committee

Current members:
Steve Mills (Chairman)
Geoffrey Duyk
Frank Kung
James McCann
Carole Piwnica

Number of meetings held in 2020: 6

The Board has determined that each member of the Operations Committee is independent (as defined in the relevant Nasdaq and SEC rules and regulations).

Role and Responsibilities

The purpose of the Operations Committee is to assist the Board with respect to operational performance, strategic transactions that present sensitive competition issues, and significant mergers & acquisition transactions, including:

- reviewing and approving significant mergers, acquisitions or divestitures, and strategic transactions that may involve sensitive competition issues;
- reviewing our quarterly operational performance and business operations and plans that may involve sensitive competition issues; and
- reviewing proposed strategic transactions relating to Amyris's capitalization, including our debt and equity structures, as necessary to meet our operational and financing needs.

Board and Committee Oversight of Risk Management

Full Board

The Board as a whole oversees our risk management systems and processes. Each of the standing Committees has been delegated oversight of certain categories of risk and provides the Board with regular reports regarding the Committees' activities.

Assessing and managing risk is the responsibility of our management, which establishes and maintains risk management processes, including prioritization, action plans and mitigation measures, designed to balance the risk and benefit of opportunities and strategies. It is management's responsibility to anticipate, identify and communicate risks to the Board and/or its Committees and discuss strategic plans and objectives, business results, financial condition, compensation programs, strategic transactions, and other matters in the context of various categories of risk.

Audit Committee

Responsible for overseeing our financial controls and risk, litigation and regulatory matters, and certain legal compliance matters, as well as enterprise risk prioritization and mitigation, and management's plans and objectives for our capitalization

Nominating & Governance Committee

Responsible for overseeing risks related to Board and Committee composition and succession, certain legal compliance matters, and corporate governance policies and practices

Leadership, Development, Inclusion & Compensation Committee

Responsible for overseeing risks associated with our Board, executive and employee compensation programs and related plans, effective management of executive succession, and management's plans, policies and practices related to human capital (including DEI strategies)

Operations & Finance Committee

Responsible for overseeing risks associated with business operations and certain strategic transactions

Director Nomination Process

In carrying out its duties to consider and nominate candidates for membership on the Board, the NGC considers a mix of perspectives, qualities and skills that would contribute to the overall corporate goals and objectives of Amyris and to the effectiveness of the Board. The NGC's goal is to nominate directors who will provide a balance of industry, business and technical knowledge, experience and capability. To this end, the NGC considers a variety of characteristics for director candidates, including demonstrated ability to exercise sound business judgment, relevant industry or business experience, understanding of, and experience with, issues and requirements facing public companies, excellence and a record of professional achievement in the candidate's field, relevant technical knowledge or aptitude, having sufficient time and energy to devote to the affairs of Amyris, independence for purposes of compliance with Nasdaq and SEC rules and regulations, as applicable, and commitment to rigorously represent the long-term interests of our stockholders. Although the NGC uses these and other criteria to evaluate potential nominees, we have no stated minimum criteria for nominees. While we do not have a formal policy with regard to the consideration of diversity in identifying director nominees, the NGC strives to reflect current state legal developments and modifications to public company standards regarding diversity and inclusion on public

company boards, and to nominate directors with a variety of complementary skills and experience. Accordingly, the NGC endeavors for the Board, as a group, to possess the appropriate talent, skills and experience to oversee our business. With respect to two of the most recent additions to our Board membership, the Board considered diversity in its elections of Ms. Qi and Mrs. Washington and the value of adding additional gender and ethnic diversity to our Board, in addition to their specific professional areas of professional expertise and many other qualifications.

The NGC generally uses the following processes for identifying and evaluating nominees for director:

- In the case of incumbent directors, the NGC reviews the directors' overall service to Amyris during each annual assessment process, including performance, effectiveness, participation, and independence.
- In seeking to identify new director candidates, the NGC may use its network of contacts, together with the network of contacts of our CEO and Secretary, to compile a list of potential candidates and may also engage, if deemed appropriate, a professional search firm. The NGC would conduct any appropriate and necessary inquiries into the backgrounds and qualifications of possible candidates after considering the structure and needs of the Board. Members of the NGC regularly review potential candidates with our CEO in order to discuss and consider such candidates' qualifications prior to organizing meetings with select nominees which may lead to recommendations to the Board of such candidates' membership by majority vote.

Stockholder Nominations

The NGC will consider director candidates recommended by stockholders and will use the same criteria to evaluate all candidates. We have not received a recommendation for a director nominee for the 2021 Annual Meeting from any stockholder. Stockholders who wish to recommend individuals for consideration by the NGC to become nominees for election to the Board may do so by delivering a written recommendation to the NGC at the following address: NGC Chairman c/o Secretary of Amyris, Inc. at 5885 Hollis Street, Suite 100, Emeryville, California 94608, at least 120 days prior to the anniversary date of the mailing of our Proxy Statement for the last annual meeting of stockholders, which for our 2022 annual meeting of stockholders is a deadline of December 13, 2021. You are also advised to review our Bylaws, which contain additional requirements about advance notice of stockholder proposals and director nominations. Submissions must include the full name of the proposed nominee, a description of the proposed nominee's business experience and directorships for at least the previous five years, complete biographical information, a description of the proposed nominee's qualifications as a director and a representation that the nominating stockholder is a beneficial or record owner of our common stock. Any such submission must be accompanied by the written consent of the proposed nominee to be named as a nominee and to serve as a director if elected.

As provided in our Certificate of Incorporation, subject to the rights of the holders of any series of preferred stock, any vacancy occurring in the Board can generally be filled only by the affirmative vote of a majority of the directors then in office. The director appointed to fill the vacancy will hold office for a term expiring at the annual meeting of stockholders at which the term of office of the class to which the director has been assigned expires and until such director's successor shall have been duly elected and qualified, or until such director's earlier death, resignation or removal.

Stockholder Communications with Directors

The Board has established a process by which stockholders may communicate with the Board or any of its members, including the Board Chairman, or to the independent directors generally. Stockholders and other interested parties who wish to communicate with the Board or any of the directors may do so by sending written communications addressed to the Secretary of Amyris at 5885 Hollis Street, Suite 100, Emeryville, California 94608. The Board has directed that the Secretary will review all communications to determine whether they

should be presented to the Board. Following such review, the Secretary will determine which communications will be compiled and submitted to the Board, or a selected group of directors or individual directors, on a periodic basis. The purpose of this screening is to allow the Board to avoid having to consider irrelevant or inappropriate communications (such as advertisements and solicitations). The screening procedure has been approved by a majority of the non-management directors of the Board. Directors may at any time request that the Secretary forward to them immediately all communications received for the Board. All communications directed to the Audit Committee in accordance with the procedures described above that relate to accounting, internal accounting controls or auditing matters involving Amyris will be promptly and directly forwarded to the Chairman of the Audit Committee who will direct distribution to the Audit Committee members as required.

Proposal 2

Ratification of Appointment of Independent Registered Public Accounting Firm

General

The Audit Committee appointed Macias Gini & O'Connell LLP ("MGO") as our independent registered public accounting firm for the fiscal year ending December 31, 2021, and the Board has directed that management submit the appointment of such independent registered public accounting firm for ratification by our stockholders at the Annual Meeting. MGO has been engaged as our independent registered public accounting firm since July 2019. We expect representatives of MGO to be present at the Annual Meeting. They will have an opportunity to make a statement if they so desire and will be available to respond to appropriate questions.

Neither our Bylaws nor other governing documents or applicable law require stockholder ratification of the appointment of our independent registered public accounting firm. However, we are submitting the appointment of MGO to our stockholders for ratification as a matter of good corporate practice. If our stockholders fail to ratify the appointment, the Audit Committee will reconsider whether or not to retain MGO. Even if the appointment is ratified, the Audit Committee in its discretion may direct the appointment of a different independent registered public accounting firm at any time during the year if they determine that such a change would be in the best interests of Amyris and our stockholders.

Background

On May 15, 2019, we determined, with the approval of the Audit Committee and the Board, to appoint BDO USA, LLP ("BDO") to serve as our independent registered public accounting firm for the fiscal year ending December 31, 2019, and to dismiss KPMG LLP ("KPMG") upon completion of its audit of our consolidated financial statement as of and for the year ended December 31, 2018 and the effectiveness of internal control over financial reporting as of December 31, 2018, and the issuance of its reports thereon as well as the re-audit of the consolidated financial statements as of and for the year ended December 31, 2017. Subsequently, on July 3, 2019, (i) BDO resigned as our independent registered public accounting firm for the fiscal year ending December 31, 2019, prior to performing any substantive work with respect to the audit work for that year, and (ii) we determined, with the approval of the Audit Committee, to: (A) dismiss KPMG as our independent registered public accounting firm for the fiscal years ended December 31, 2018 and 2017, (B) appoint MGO as our independent registered public accounting firm for the fiscal years ended December 31, 2019 and 2018, and (C) appoint BDO as our independent registered public accounting firm for the re-audit of our consolidated financial statements for the fiscal year ended December 31, 2017. On July 9, 2019, MGO was formally engaged as our independent registered public accounting firm for the fiscal years ended December 31, 2019 and 2018. On July 10, 2019, BDO was formally engaged as our independent registered public accounting firm for the re-audit of our consolidated financial statements for the fiscal year ended December 31, 2017. The Audit Committee authorized KPMG to respond fully to all inquiries from BDO and MGO, and BDO to respond fully to all inquiries from MGO.

The audit report of KPMG on our consolidated financial statements as of and for the year ended December 31, 2017 did not contain any adverse opinion or disclaimer of opinion, nor was it qualified or modified as to audit scope or accounting principles, except as follows: KPMG's report on our consolidated financial statements as of and for the year ended December 31, 2017 contained a separate paragraph stating that "The accompanying consolidated financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 1 to the consolidated financial statements, the Company has suffered recurring losses from operations and has current debt service requirements that raise substantial doubt about its ability to continue as a going concern. Management's plans in regard to these matters are also described in Note 1. The consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty."

On April 5, 2019 and May 14, 2019, the Audit Committee and the Board (upon the recommendation of the Audit Committee), respectively, after consultation with senior management and KPMG, concluded that our consolidated financial statements for the year ended December 31, 2017 and the quarterly and year-to-date periods ended March 31, 2018, June 30, 2018 and September 30, 2018, respectively, should be restated and should no longer be relied upon. Further, our disclosures related to such financial statements and related communications issued by or on behalf of us with respect to such periods, including management's assessment of internal control over financial reporting as of December 31, 2017, should also no longer be relied upon. As of July 3, 2019, KPMG had not completed its audit procedures or issued any reports on our consolidated financial statements as of and for the year ended December 31, 2018 or our internal control over financial reporting and disclosure controls and procedures as of December 31, 2018. Other than the reportable events disclosed above, during our two most recent fiscal years ended December 31, 2019 and December 31, 2018, respectively, there were no "disagreements" or "reportable events," as such terms are described in Items 304(a)(1)(iv) and 304(a)(1)(v), respectively, of Regulation S-K and the related instructions thereto, with KPMG or BDO on any matter of accounting principles or practices, financial statement disclosure, or auditing scope or procedure, which disagreement(s) or reportable event(s), if not resolved to the satisfaction of KPMG or BDO, as applicable, would have caused KPMG or BDO, as applicable, to make reference to the subject matter of the disagreement(s) or reportable event(s) in connection with its report on our consolidated financial statements for the relevant year.

During our two most recent fiscal years, which ended December 31, 2020 and December 31, 2019, neither we nor any person on our behalf consulted with MGO with respect to either (i) the application of accounting principles to a specified transaction, either completed or proposed, or the type of audit opinion that might be rendered on our consolidated financial statements, and neither a written report was provided to us nor oral advice was provided that MGO concluded was an important factor in reaching a decision as to any accounting, auditing or financial reporting issue; or (ii) any matter that was either the subject of a "disagreement" or a "reportable event," as such terms are described in Items 304(a)(1)(iv) and 304(a)(1)(v) of Regulation S-K.

Vote Required and Board Recommendation

Ratification of the appointment of MGO requires the affirmative vote of the holders of a majority of the shares of common stock properly casting votes for or against this proposal at the Annual Meeting in person or by proxy. Abstentions will not count toward the vote total for this proposal and therefore will not affect the outcome of this proposal. Shares represented by executed proxies that do not indicate a vote "For," "Against" or "Abstain" will be voted by the proxy holders "For" this proposal.

The Board recommends a vote "FOR" this Proposal 2

Independent Registered Public Accounting Firm Fee Information

MGO has served as our independent registered public accounting firm for the fiscal years ended December 31, 2020 and 2019. The following tables set forth the aggregate fees billed to us by MGO for services performed in or for those fiscal years then ended (in thousands):

	Fiscal Year ended December 31,	
Fee Category	2020	2019
Audit Fees	$2,076.8	$2,467.9
Audit-Related Fees	—	—
Tax Fees	—	—
All Other Fees	91.8	109.2
Total Fees	$2,168.6	$2,577.1

The "Audit Fees" category includes aggregate fees billed for the relevant fiscal year for professional services rendered for the audit of our annual financial statements and review of our unaudited financial statements included in our Quarterly Reports on Form 10-Q, and for services that are normally provided in connection with statutory and regulatory filings or engagements for those fiscal years.

The "Audit-Related Fees" category includes aggregate fees billed in the relevant fiscal years for assurance and related services that are reasonably related to the performance of the audit or review of our consolidated financial statements and that are not reported under the "Audit Fees" category. We did not incur any fees in this category with respect to MGO for the fiscal years ended December 31, 2020 and 2019.

The "Tax Fees" category includes aggregate fees billed in the relevant fiscal year for professional services rendered with respect to tax compliance, tax advice and tax planning. We did not incur any fees in this category with respect to MGO for the fiscal years ended December 31, 2020 and 2019.

The "All Other Fees" category includes aggregate fees billed in the relevant fiscal year for products and services other than those reported under the other categories described above. In the fiscal years ended December 31, 2020 and 2019, we incurred fees in this category related to our private placement transaction and the filing of registration statements on Forms S-1 and S-8.

Audit Committee Pre-Approval of Services Performed by our Independent Registered Public Accounting Firm

The Audit Committee's charter requires it to approve all fees and other compensation paid to, and pre-approve all audit and non-audit related services provided by, the Company's independent registered public accounting firm. The Audit Committee charter permits the Audit Committee to delegate pre-approval authority to one or more members of the Audit Committee, provided that any pre-approval decision is reported to the Audit Committee at its next scheduled meeting. The Audit Committee has delegated such pre-approval authority, for fees of up to $100,000 in the aggregate, to the Chairman of the Audit Committee.

In determining whether to approve audit and non-audit services to be performed by our independent registered public accounting firm, the Audit Committee takes into consideration the fees to be paid for such services and whether such fees would affect the independence of the accounting firm in performing its audit function. In addition, when determining whether to approve non-audit services to be performed by our independent registered public accounting firm, the Audit Committee considers whether the performance of such services is compatible

with maintaining the independence of the accounting firm in performing its audit function, and confirms that the non-audit services will not include the prohibited activities set forth in Section 201 of the Sarbanes-Oxley Act of 2002. Except for the services described above under "Audit-Related Fees," "Tax Fees" and "All Other Fees" (each of which was pre-approved by the Audit Committee in accordance with its policy), no non-audit services were provided by our independent registered public accounting firm in 2020 or 2019.

All fees paid to, and all services provided by, our independent registered public accounting firm during fiscal years 2020 and 2019 were pre-approved by the Audit Committee in accordance with the pre-approval procedures described above.

Report of the Audit Committee*

The Audit Committee has reviewed and discussed with management our audited consolidated financial statements for the fiscal year ended December 31, 2020. The Audit Committee has also discussed with MGO, our independent registered public accounting firm, the matters required to be discussed by Public Company Accounting Oversight Board Auditing Standard No. 1301 (Communications with Audit Committees), as amended.

The Audit Committee has received and reviewed the written disclosures and the letter from MGO required by applicable requirements of the Public Company Accounting Oversight Board regarding MGO's communications with the Audit Committee concerning independence, and has discussed with MGO its independence.

Based on the review and discussions referred to above, the Audit Committee recommended to the Board that the audited consolidated financial statements be included in our Annual Report on Form 10-K for the fiscal year ended December 31, 2020 for filing with the SEC.

Amyris, Inc. Audit Committee of the Board

Steven Mills (Chairman)
Geoffrey Duyk
James McCann

* *The material in this report is not "soliciting material," is not deemed "filed" with the SEC and is not to be incorporated by reference into any filing of Amyris under the Securities Act or the Securities Exchange Act of 1934 (the "Exchange Act"), whether made before or after the date hereof and irrespective of any general incorporation language in any such filing.*

Proposal 3

Approval of Our Amended and Restated 2010 Employee Stock Purchase Plan

We are asking our stockholders to approve the amendment and restatement, in its entirety, of our 2010 Employee Stock Purchase Plan (the "Restated ESPP") to enable our employees to continue to purchase shares of our common stock under the 2010 Employee Stock Purchase Plan (the "ESPP"). The approval of this amendment and restatement of the ESPP will (i) extend the term of the ESPP, (ii) increase the number of shares authorized for issuance by 800,000 shares, (iii) extend the annual automatic increase (or evergreen) provision by nine years and (iv) make certain non-substantive clarifying revisions.

The ESPP is an important component of the overall compensation package we offer to our employees and, therefore, our ability to attract and retain employees would be harmed if we could no longer continue the ESPP. If the Restated ESPP is not approved, the ESPP will expire on November 15, 2021 (the tenth anniversary of the first purchase date under the ESPP). The Restated ESPP will extend the term until the earlier of (x) issuance of all of the shares of common stock reserved for issuance under the Restated ESPP; (y) the tenth anniversary of the first purchase date under the Restated ESPP or (z) an earlier termination of the Restated ESPP as approved by our Board.

The amendment and restatement also ensures that we will have a sufficient reserve of common stock available under the Restated ESPP to provide our eligible employees with the continuing opportunity to acquire a stock ownership interest in us through participation in a payroll deduction based employee stock purchase plan. As of March 1, 2021, there were approximately 494,855 shares available for issuance under the ESPP, which number was increased to 536,932 after giving effect to the annual evergreen increase of 42,077 shares, which is expected to satisfy our equity needs through November 15, 2021. This evergreen increase was approved by the Board on March 24, 2021, to be effective as of January 1, 2021. If this amendment and restatement to add 800,000 shares to the Restated ESPP and to extend the evergreen provision through January 1, 2030 is approved, it is expected there will be sufficient shares available under the Restated ESPP to satisfy our equity needs for approximately 10 years or through the 2031 annual meeting.

In light of the expiration of our ESPP, the Board wishes to amend and restate our ESPP to ensure that we may continue to offer to our employees the ability to acquire shares of common stock at a discount. Similar to the ESPP, the purpose of the Restated ESPP is to provide our employees with a convenient means of acquiring an equity interest through payroll contributions, to enhance such employees' sense of participation in our business, and to provide an incentive for continued employment through the opportunity to acquire equity at a discounted price.

The Board of Directors believes that our success is due to our highly talented employee base and that our future success depends on the ability to attract and retain high caliber personnel. The Restated ESPP will be an important incentive tool supporting us in our continued efforts to attract, retain and motivate qualified personnel, while also aligning the long-term value creation objectives of our workforce with those of our stockholders.

Our headquarters is based in the San Francisco Bay Area where we must compete with many companies for a limited pool of talented people. The Board, the LDICC of the Board and company management all believe that equity compensation is essential to maintaining a balanced and competitive compensation program, has been integral to the company's success in the past and is vital to its ability to achieve strong performance in the future.

Our named executive officers have an interest in this proposal by virtue of their being eligible to participate in the Restated ESPP. During the year ended December 31, 2020, of our named executive officers, only one participated

in the ESPP, during which time Eduardo Alvarez purchased 3,000 shares under the ESPP. Non-employee directors of the Board are not eligible to participate in the Restated ESPP.

If the Restated ESPP is not approved by our stockholders, the ESPP will expire by its terms on November 15, 2021 and we will no longer be able to offer this benefit to our employees.

Vote Required and Board Recommendation

This proposal must receive a "For" vote from the holders of a majority of the shares of common stock properly casting votes for or against this proposal at the Annual Meeting in person or by proxy. If you own shares through a bank, broker or other Intermediary, you must instruct your bank, broker or other Intermediary how to vote in order for them to vote your shares so that your vote can be counted on this proposal. Abstentions and broker non-votes will not be counted toward the vote total for this proposal and therefore will not affect the outcome of this proposal.

The Board recommends a vote "FOR" this Proposal 3

Description of the Amended and Restated 2010 Employee Stock Purchase Plan

The principal terms of the Restated ESPP are summarized below. This summary is qualified in its entirety by reference to the full text of the Restated ESPP, which is attached as Appendix A to this Proxy Statement.

Background

The Board approved the Restated ESPP on March 24, 2021, subject to our stockholder's approval. The Restated ESPP will become effective on May 28, 2021, provided that the Restated ESPP is approved by the stockholders at the 2021 Annual Meeting. The Restated ESPP, including the right of participants to make purchases under the Restated ESPP, is intended to qualify as an "Employee Stock Purchase Plan" under the provisions of Section 421 and 423 of the Code. The provisions of the Restated ESPP shall, accordingly, be construed so as to extend and limit participation in a manner consistent with the requirements of those sections of the Code. The Restated ESPP will not be a qualified deferred compensation plan under Section 401(a) of the Code, and is not subject to the provisions of ERISA.

Administration

The Restated ESPP is expected to be administered by our LDICC, all of the members of which are non-employee directors under applicable federal securities laws. Subject to the terms of the Restated ESPP, the LDICC will have the authority to, among other matters, determine the eligibility of participants, determine the terms and conditions of offerings under the Restated ESPP, and construe and interpret the terms of the Restated ESPP.

Share Reserve

If approved, the number of shares reserved for issuance under the Restated ESPP will be 2,466,666. In addition, the aggregate number of shares reserved for sale under the Restated ESPP will increase automatically on January 1 of each year, for nine years, commencing on January 1, 2022 by the number of shares equal to the lesser of 1% of the total outstanding shares of all classes of our common stock as of the immediately preceding December 31 (rounded to the nearest whole share) or a lesser number of shares as may be determined by our Board of Directors in any particular year. The aggregate number of shares reserved under the Restated ESPP and the maximum number of shares that may be issued over the term of the Restated ESPP, subject to stock-splits, recapitalizations or similar events, may not exceed 24,666,660 shares of our common stock. The closing price per share of our common stock on March 1, 2021 was $15.66.

Offering Periods; Purchase Rights

The Restated ESPP is currently expected to provide that each offering period under the Restated ESPP is for twelve months and consists of two six-month purchase periods, consistent with the terms of the ESPP. Offering periods under the Restated ESPP will commence on May 16th and November 16th of each year during the term of the Restated ESPP. The LDICC may change the duration and structure of future offering periods in accordance with the terms of the Restated ESPP, provided that no offering period may extend for a period longer than 27 months. Eligible participants may only participate in one offering period cycle.

On the first trading day of each offering period (the "Offering Date"), each eligible employee who has properly enrolled in that offering period in accordance with the rules prescribed by the LDICC will be granted an option to purchase shares of the Company's common stock to be funded by payroll deductions, based on the participant's elected contribution rate. Unless a participant has properly withdrawn from the offering period, each option granted under the Restated ESPP will automatically be exercised on the last trading day of each purchase period within the offering period (each, a "Purchase Date"). The purchase price will be equal to 85% of the lesser of the fair market value of our common stock on (i) the Offering Date; and (ii) the Purchase Date.

Eligibility

Generally, all of our employees and employees of any of our subsidiaries designated by the LDICC will be eligible to participate in the Restated ESPP; provided that employees who own (or are deemed to own as a result of stock attribution rules), stock constituting 5% or more of the total combined voting power or value of all classes of our stock or any of our subsidiaries will not be permitted to participate in the Restated ESPP. The LDICC may, in its discretion, exclude the following categories of employees from participation: (i) employees who are not employed prior to the beginning of an offering period or prior to such other time period as specified by the LDICC (which currently requires eligible employees must have been employed for no less than one (1) month prior to the first day of an Offering Period), (ii) employees who are customarily employed 20 hours or less per week in a calendar year; (iii) employees who are customarily employed five months or less in a calendar year; (iv) certain "highly compensated" employees; (v) employees who are citizens or residents of a foreign jurisdiction, if such employee's participation is prohibited under the laws of the jurisdiction governing such employee or compliance with the laws of the foreign jurisdiction would violate the requirements of Section 423 of the Code and (vi) individuals who provide services to the Company who are reclassified as common law employees for any reason except for federal income and employment tax purposes.

As of March 1, 2021, approximately 470 of our employees were eligible to participate in the Restated ESPP.

Enrollment in the Restated ESPP

Eligible employees become participants in the Restated ESPP by completing a subscription agreement or enrolling online authorizing payroll deductions prior to the applicable Offering Date. A person who becomes employed after the commencement of an offering period may not participate in the Restated ESPP until the commencement of the next offering period.

Contribution and Purchase Limitations

Unless otherwise determined by the LDICC in accordance with the terms of the Restated ESPP, no participant may (i) elect a contribution rate of more than 15% of his or her compensation for the purchase of shares under the Restated ESPP in any one payroll period; (ii) purchase more than 3,000 shares of the Company's common stock under the Restated ESPP on any one Purchase Date; and (iii) purchase shares that have a fair market value of more than $25,000, determined as of the Offering Date, in any calendar year in which the offering period is in effect.

Certain Corporate Transactions

If the number of outstanding shares of our common stock is changed by a stock dividend, recapitalization, stock split, reverse stock split, subdivision, combination, reclassification, or similar change in our capital structure without consideration, then the LDICC will proportionately adjust the number of shares available under the Restated ESPP, the purchase price, the number of shares any participant has elected to purchase and the limit on the number of shares a participant may purchase on any one Purchase Date.

In the event of a Corporate Transaction (as defined in the Restated ESPP), each outstanding right to purchase Common Stock under the Restated ESPP will be assumed or an equivalent option substituted by the successor corporation. In the event that the successor corporation refuses to assume or substitute for the purchase right, the offering period with respect to which such purchase right relates will be shortened and provide for a new final Purchase Date, which shall occur on or prior to the consummation of the Corporate Transaction, as determined by the LDICC. The Restated ESPP shall terminate on the closing of the Corporate Transaction.

Term; Amendments and Termination

The Restated ESPP will expire on the earlier of (x) the issuance of all of the shares of common stock reserved for issuance under the Restated Plan; (y) the tenth anniversary of the first purchase date under the Restated ESPP; or (z) an earlier termination of the Restated ESPP as approved by our Board. The LDICC may generally amend, suspend or terminate the Restated ESPP at any time without stockholder approval, except as may be required by applicable law or exchange listing rules.

New Plan Benefits

Participation in the Restated ESPP is voluntary and each eligible employee will have the discretion to determine whether and to what extent to participate in and contribute to the Restated ESPP. Accordingly, the benefits and amounts that will be received or allocated to officers and other employees under the Restated ESPP are not determinable at this time. Non-employee directors of the Board are not eligible to participate in the Restated ESPP. No purchase rights have been granted, and no shares of common stock have been issued, with respect to the 800,000 share increase and extended annual increase provision for which shareholder approval is sought under this proposal. Should such shareholder approval not be obtained, then neither the share increase nor the extended annual increase provision will be implemented.

Historical Plan Benefits

The following table shows, as to each of the individuals or groups indicated, the aggregate number of shares of common stock purchased under the ESPP since its inception through March 1, 2021. No shares of common stock have been purchased under the ESPP by (i) any individual director nominee who is not an employee, (ii) the current non-employee directors as a group, or (iii) any associate of any of our directors (including nominees). No person received 5% or more of the total shares of common stock purchased under the ESPP since its inception.

Aggregate Purchases under the ESPP

Name and Position	Aggregate Number of Purchased Shares
John Melo, President and Chief Executive Officer	508
Han Kieftenbeld, Chief Financial Officer and Chief Administration Officer	—
Eduardo Alvarez, Chief Operating Officer	6,000
All current executive officers as a group (4 persons)	6,508
All current and former employees, excluding current executive officers as a group	1,123,226

Certain U.S. Federal Income Tax Consequences

The following is a general summary of the United States federal income tax consequences to us and to participants in the Restated ESPP based on tax laws in effect as of the date of this Proxy Statement. This summary is not intended to be exhaustive and does not address all matters that may be relevant to any particular participant. Among other considerations, this summary does not describe the tax laws of any state, municipality or foreign jurisdiction, or describe gift, estate, excise, payroll or other employment taxes. Participants are advised to consult with their tax advisors regarding the tax consequences of participation in the Restated ESPP. The Restated ESPP is intended to qualify as an "employee stock purchase plan" under Section 423 of the Internal Revenue Code and the following discussion is based on the assumption that it is so qualified.

Each participant's payroll deductions under the Restated ESPP will be made on an after-tax basis. Generally, the participant will not recognize any taxable income at the time he or she is granted an option to purchase shares of common stock during an offering period or at the time the option is exercised to purchase shares on behalf of the participant. The participant will generally only recognize taxable income (or loss) on the date the participant sells or otherwise disposes of the acquired shares. The particular tax consequence depends on the length of time such shares are held by the participant prior to the sale or disposition.

If the shares are sold or disposed of more than two years from the first day of the offering period during which the shares were purchased, and more than one year from the Purchase Date or if the participant dies while holding the shares, the participant (or his or her estate) will recognize ordinary income measured as the lesser of (i) the amount by which the fair market value of the shares on the Offering Date exceeded the purchase price of the shares (calculated as though the shares had been purchased on the Offering Date) and (ii) the excess of the fair market value of the shares at the time of such sale or other disposition over the purchase price. Any additional gain will be treated as long-term capital gain. If the shares are held for the holding periods described above but are sold for a price that is less than the purchase price, there is no ordinary income and the participating employee has a long-term capital loss for the difference between the sale price and the purchase price. If the shares are sold or otherwise disposed of before the expiration of either of the holding periods described above, the participant will recognize ordinary income generally measured as the excess of the fair market value of the shares on the date the shares are purchased over the purchase price. Any additional gain or loss on such sale or disposition will be long-term or short-term capital gain or loss, depending on how long the shares were held following the date they were purchased by the participant prior to disposing of them.

We are generally not entitled to a deduction for amounts taxed as ordinary income or capital gain to a participant except to the extent of ordinary income recognized upon a sale or disposition of shares prior to the expiration of the holding periods described above.

Equity Compensation Plan information

The following table shows certain information concerning our common stock reserved for issuance in connection with our 2005 Stock Option/Stock Issuance Plan, our 2020 Equity Incentive Plan ("2020 EIP"), our 2010 EIP and our 2010 Employee Stock Purchase Plan, all as of December 31, 2020:

Plan category	Number of securities to be issued upon exercise of outstanding options, warrants and rights	Weighted-average exercise price of outstanding options	Number of securities to be issued upon vesting of outstanding restricted stock units	Number of securities remaining available for future issuance under equity compensation plans[1][2]
Equity compensation plans approved by security holders	6,502,096	$7.64	7,043,909	5,782,707
Equity compensation plans not approved by security holders	—	—	—	—
Total	6,502,096	$7.64	7,043,909	5,782,707

(1) Includes 5,287,852 shares reserved for future issuance under our 2020 EIP and 494,855 shares reserved for future issuance under our 2010 Employee Stock Purchase Plan. No shares are reserved for future issuance under our 2005 Stock Option/Stock Issuance Plan or our 2010 EIP other than shares issuable upon exercise of equity awards outstanding under such plans.

(2) Effective January 1, 2021, the number of shares available for future issuance under our 2020 EIP was increased by 12,247,572 shares pursuant to the automatic increase provision contained in the 2020 EIP and the number of shares available for future issuance under our 2010 Employee Stock Purchase Plan was increased by 42,077 shares, in each case pursuant to automatic increase provisions contained in the respective plans. The automatic increase provision of the 2010 Employee Stock Purchase Plan is discussed above. The number of shares reserved for issuance under the 2020 EIP increases automatically on January 1 of each year starting with January 1, 2021, by a number of shares equal to 5% of the Company's total outstanding shares as of the immediately preceding December 31. However, the Board or LDICC retains the discretion to reduce the amount of the increase in any particular year.

Proposal 4

Approval of Amendment of Restated Certificate of Incorporation to increase the Total Number of Authorized Shares of Common Stock

General

We are asking stockholders to approve an amendment (the "Amendment") to Article IV of our restated Certificate of Incorporation to increase the total number of our authorized shares from 355,000,000 to 455,000,000 and the number of authorized shares of common stock from 350,000,000 to 450,000,000 (the "Authorized Share Increase"). The Board has approved the advisability of, and has adopted, subject to stockholder approval, the Amendment and the Authorized Share Increase. The Amendment requires approval of both the Board and our stockholders. Accordingly, we are seeking stockholder approval for the Amendment at the Annual Meeting by means of this Proxy Statement. The form of the proposed Amendment is attached to this Proxy Statement as Appendix B and is incorporated herein by reference.

Article IV of our Certificate of Incorporation currently authorizes us to issue up to 355,000,000 shares of stock, with 350,000,000 designated as common stock and 5,000,000 designated as preferred stock. The additional common stock will have rights identical to our currently outstanding common stock. The number of authorized shares of our preferred stock will not be affected by this amendment; it will be maintained at 5,000,000 shares. No other changes are being proposed to our Certificate of Incorporation.

Our common stock consists of a single class, with equal voting, distribution, liquidation and other rights. As of April 1, 2021, of our 350,000,000 shares of authorized common stock, 273,266,917 shares were issued and outstanding and approximately 60 million shares were reserved for issuance under our current equity plans, outstanding convertible promissory notes, outstanding convertible preferred stock, and other outstanding rights to acquire common stock.

Purpose of the Authorized Share Increase

The reason for the proposed amendment is to increase our financial flexibility to pursue strategic opportunities from time to time, including potential acquisitions and other capital-intensive opportunities, and to facilitate our ability to continue implementing our employee equity programs at competitive levels. Our cash flow from operations has been, and continues to be, negative. We may need to raise additional operating capital. The Board may determine that the optimal manner for doing so is the sale of equity securities, instruments convertible into equity securities or options or rights to acquire equity securities. For example, since 2013 we have been engaging in financings involving the private placement of our common stock, convertible promissory notes or warrants.

The increase in authorized shares of common stock will give the Board the flexibility to undertake certain transactions to support our business operations, without the potential expense or delay associated with obtaining stockholder approval for any particular issuance. We do not currently have enough shares authorized to provide sufficient flexibility to pursue appropriate financing opportunities if they arise, or to take certain other actions that the Board may determine are in our best interests and the best interests of our stockholders. For example, we

could issue additional shares of common stock in the future in connection with one or more of the following (subject to laws, regulations or Nasdaq rules that might require stockholder approval of certain transactions):

- strategic investments;
- acquisitions;
- partnerships, collaborations and other similar transactions;
- financing transactions, such as public or private offerings of common stock or convertible securities;
- debt or equity restructuring or refinancing transactions;
- stock splits or stock dividends; or
- any other proper corporate purposes.

The increase will also facilitate our ability to continue implementing our employee equity programs at competitive levels. As of April 1, 2021, all of our currently authorized shares of common stock has either been issued or reserved for issuance under our equity incentive plans or upon exercise of outstanding warrants or conversion of outstanding convertible promissory notes, or needs to be reserved for issuance upon exercise of outstanding rights (as described below), after taking into consideration the full potential of interest that accrues and can convert to, or be payable in, shares of our common stock (including the shares of common stock to be issued subject to approval of Proposal 4).

Vote Required and Board Recommendation

This proposal must receive a "For" vote from the holders of a majority of our outstanding shares of common stock entitled to vote at the Annual Meeting, irrespective of the number of votes cast on the proposal at the meeting. If you own shares through a bank, broker or other Intermediary, you must instruct your bank, broker or other Intermediary how to vote in order for them to vote your shares so that your vote can be counted on this proposal. Abstentions and broker non-votes will have the same effect as an "Against" vote for this proposal.

The Board recommends a vote "FOR" this Proposal 4.

The Board believes it is desirable for us to have the flexibility to issue, without further stockholder action, additional shares of common stock in excess of the amount that is currently authorized. As is the case with the current authorized, unreserved, and unissued shares of common stock, the additional shares of common stock authorized by this proposed amendment could be issued upon approval by the Board or the LDICC, as applicable, without further vote of our stockholders except as may be required in particular cases by applicable law, regulatory agencies or Nasdaq rules. Such shares would be available for issuance from time to time as determined by the Board or the LDICC, as applicable, for any proper corporate purpose. Such purposes might include, without limitation, issuance in public or private sales for cash as a means of obtaining additional capital for use in our business and operations, issuance in repayment of indebtedness and/or issuance pursuant to stock plans relating to options, restricted stock, restricted stock units and other equity grants.

Potential Adverse Effects

If this proposal is adopted, the additional authorized shares of common stock can be issued or reserved with approval of the Board or the LDICC, as applicable, at times, in amounts, and upon terms that the Board, or the

LDICC, may determine, without additional stockholder approval. Stockholder approval of this proposal will not, by itself, cause any change in our capital accounts. However, any future issuance of additional shares of authorized common stock, or securities convertible into common stock, would ultimately result in dilution of existing stockholders who do not participate in such transactions, and could also have a dilutive effect on book value per share and any future earnings per share. Dilution of equity interests could also cause prevailing market prices for our common stock to decline. Current stockholders (other than those who are party to specific rights agreements with us, as described below) will not have preemptive rights to purchase additional shares.

In addition to dilution, the availability of additional shares of common stock for issuance could, under certain circumstances, discourage or make more difficult any efforts to obtain control of Amyris. For example, significant stock and convertible security issuances in connection with a series of private-placement financing efforts since 2012 have resulted in further concentration of ownership of Amyris by related parties. Such concentration of ownership could make it more difficult for an unrelated third party to undertake an acquisition of us. The Board is not aware of any actual or contemplated attempt to acquire control of Amyris and this proposal is not being presented with the intent that it be used to prevent or discourage any acquisition attempt. However, nothing would prevent the Board from taking any actions that it deems consistent with its fiduciary duties.

Risks to Stockholders of Non-Approval

Because our cash flow from operations has been negative, if the stockholders do not approve this proposal, the Board may be precluded from pursuing a wide range of potential corporate opportunities that might raise necessary cash or otherwise be in the best interests of Amyris and the best interests of our stockholders, or from fulfilling certain equity obligations under our equity plans. This could have a material adverse effect on our business and prospects. We would also face substantial challenges in hiring and retaining employees at all levels, including our Executive Leadership Team, in the near term.

Interests of Certain Persons

Our executive officers and directors have an interest in this proposal by virtue of their being eligible to receive equity awards under our 2020 EIP, and any future equity incentive plan we adopt.

Some of our directors are affiliated with, or were appointed as directors by, entities that own convertible securities, rights and/or warrants that are convertible into or exercisable for shares of our common stock. Further, some of our directors are affiliated with, or were appointed as directors by, entities that may participate in future equity financings that will require issuance or reservation of shares authorized by the proposed amendment to our Certificate of Incorporation. The beneficial ownership of our directors and its affiliates is set forth in section "Security Ownership of Certain Beneficial Owners and Management" of this Proxy Statement.

DSM International B.V., Naxyris S.A., and Vivo Capital LLC, each of which has or recently had relationships to our directors, all hold a right of first investment that allows them to participate in specified future securities offerings (pro rata based on their percentage ownership of then-outstanding common stock).

Text of Proposed Amendment

The text of the proposed amendment to our Certificate of Incorporation to effect the Authorized Share Increase is attached to this Proxy Statement as Appendix B. However, such text is subject to amendment to include such changes as may be required by the office of the Secretary of State of the State of Delaware or as the Board of Directors deems necessary and advisable to effect the Authorized Share Increase under this proposal.

Security Ownership of Certain Beneficial Owners and Management

The following table sets forth information with respect to the beneficial ownership of our common stock, as of March 1, 2021, by:

- each person, or group of affiliated persons, who is known by us to beneficially own more than 5% of our voting securities;
- each of our directors;
- each of our named executive officers; and
- all of our directors and executive officers as a group.

Beneficial ownership is determined in accordance with the rules of the SEC and generally includes any shares over which the individual or entity has sole or shared voting power or investment power. These rules also treat as outstanding all shares of capital stock that a person would receive upon the exercise of any option, warrant or right or through the conversion of a security held by that person that are immediately exercisable or convertible or exercisable or convertible within 60 days of the date as of which beneficial ownership is determined. These shares are deemed to be outstanding and beneficially owned by the person holding those options, warrants or rights or convertible securities for the purpose of computing the number of shares beneficially owned and the percentage ownership of that person, but they are not treated as outstanding for the purpose of computing the percentage ownership of any other person. The information does not necessarily indicate beneficial ownership for any other purpose. Except as indicated in the footnotes to the below table and pursuant to applicable community property laws, to our knowledge the persons named in the table below have sole voting and investment power with respect to all shares of common stock attributed to them in the table.

Information with respect to beneficial ownership has been furnished to us by each director and named executive officer and certain stockholders, and derived from publicly-available SEC beneficial ownership reports on Forms 3 and 4 and Schedules 13D and 13G filed by covered beneficial owners of our common stock. Percentage ownership of our common stock in the table is based on 263,920,258 shares of our common stock outstanding on March 1, 2021 (as reflected in the records of our stock transfer agent). Except as otherwise set forth below, the address of the beneficial owner is c/o Amyris, Inc., 5885 Hollis Street, Suite 100, Emeryville, California 94608.

Name and Address of Beneficial Owner	Number of Shares Beneficially Owned (#)	Percent of Class (%)
5% Stockholders:		
Foris Ventures, LLC[1]	90,615,358	34.3
DSM International B.V.[2]	25,122,263	9.5
FMR LLC[3]	18,442,566	7.0
Farallon Entities[4]	17,500,000	6.6
Vivo Capital LLC[5]	16,315,362	6.2
Directors and Named Executive Officers:		
John Melo[6]	360,192	*
John Doerr[1][7]	94,249,669	35.7
Geoffrey Duyk[8]	21,964	*
Philip Eykerman[9]	19,330	*
Christoph Goppelsroeder[10]	—	—
Frank Kung[5][11]	16,325,294	6.2
James McCann[12]	6,972	*
Steven Mills[13]	21,780	*
Carole Piwnica[14]	5,764,567	2.2
Lisa Qi	—	—
Julie Washington	—	—
Patrick Yang[15]	56,058	*
Eduardo Alvarez[16]	268,940	*
Han Kieftenbeld[17]	6,328	*
All Directors and Executive Officers as a Group (15) Persons)[18]	117,203,500	44.4

* Less than 1%.

(1) Includes 3,778,230 shares of common stock issuable upon exercise of certain warrants held by Foris. Foris is indirectly owned by director John Doerr, who shares voting and investment control over the shares held by Foris. The address for Foris is 751 Laurel Street #717, San Carlos, California 94070.

(2) Includes 6,057,966 shares of common stock issuable upon exercise of certain warrants held by DSM International B.V. (together with its affiliates, "DSM"). DSM International B.V. is a wholly owned subsidiary of Koninklijke DSM N.V. Accordingly, Koninklijke DSM N.V. may be deemed to share beneficial ownership of the securities held of record by DSM International B.V. Koninklijke DSM N.V. is a publicly traded company with securities listed on the Amsterdam Stock Exchange. The address for DSM International B.V. is HET Overloon 1, 6411 TE Heerlen, Netherlands.

(3) The address for FMR LLC is 245 Summer Street, Boston, Massachusetts 02210.

(4) According to the Schedule 13G/A filed with the SEC on February 16, 2021, Farallon Partners, L.L.C. ("Farallon General Partner"), as the general partner of Farallon Capital Institutional Partners, L.P., Farallon Capital Institutional Partners II, L.P., Farallon Capital Institutional Partners III, L.P., Farallon Capital Offshore Investors II, L.P., and Farallon Capital (AM) Investors, L.P., had shared voting and dispositive power over 16,651,633 shares held directly held by such Farallon entities. Farallon Institutional GP V, L.L.C. ("FCIP V General Partner"), as general partner of Four Crossings Institutional Partners V, L.P., had shared voting and dispositive power over 746,299 shares. Farallon F5 (GP), L.L.C. ("F5MI General Partner"), as general partner of Farallon Capital F5 Master I, L.P., had shared voting and dispositive power over 848,367 shares. As managing member

or senior managing member of Farallon General Partner and manager or senior manager of FCIP V General Partner and F5MI General Partner, Philip D. Dreyfuss, Michael B. Fisch, Richard B. Fried, David T. Kim, Michael G. Linn, Rajiv A. Patel, Thomas G. Roberts, Jr., William Seybold, Andrew J. M. Spokes, John R. Warren and Mark C. Wehrly each had shared voting and dispositive power over the shares held by the Farallon Entities. The address for Farallon Entities is c/o Farallon Capital Management, L.L.C., One Maritime Plaza, Suite 2100, San Francisco, California 94111.

(5) Includes (i) 1,943,661 shares of common stock issuable upon conversion of shares of the Company's Series D Convertible Preferred Stock (the "Series D Preferred Stock") held by affiliates of Vivo Capital LLC (together with its affiliates, "Vivo") and (ii) 1,212,787 shares of common stock issuable upon exercise of certain warrants held by Vivo. Director Frank Kung is a founding member of Vivo and a voting member of the general partner of Vivo entities that hold our common stock, Series D Preferred Stock and warrants, and may be deemed to share voting and dispositive power over the shares held by such entities. The address for Vivo is 505 Hamilton Avenue, Suite 207, Palo Alto, California 94301.

(6) Shares beneficially owned by Mr. Melo include 142,593 shares of common stock issuable upon exercise of stock options that were exercisable within 60 days of March 1, 2020.

(7) Shares beneficially owned by Mr. Doerr include (i) 90,615,358 shares of common stock beneficially owned by Foris, in which Mr. Doerr indirectly owns all of the membership interests, (ii) 3,333,333 shares of common stock beneficially owned by Perrara Ventures, LLC, in which Mr. Doerr indirectly owns all of the membership interests, (iii) 567 shares of common stock held by The Vallejo Ventures Trust U/T/A 2/12/96, of which Mr. Doerr is a trustee, (iv) 278,882 shares of common stock held by entities affiliated with Kleiner Perkins Caufield & Byers of which Mr. Doerr is an affiliate, excluding 16,399 shares over which Mr. Doerr has no voting or investment power and (v) 13,731 shares of common stock issuable upon exercise of stock options that were exercisable within 60 days of March 1, 2021.

(8) Shares beneficially owned by Dr. Duyk include 8,132 shares of common stock issuable upon exercise of stock options that were exercisable within 60 days of March 1, 2021.

(9) Shares beneficially owned by Mr. Eykerman include 11,665 shares of common stock issuable upon exercise of stock options that were exercisable within 60 days of March 1, 2021. Mr. Eykerman was appointed to the Board on May 18, 2017 as the designee of DSM. Mr. Eykerman disclaims beneficial ownership of all shares of Amyris common stock that are or may be beneficially owned by DSM or any of its affiliates.

(10) Mr. Goppelsroeder was appointed to the Board on November 2, 2017 as the designee of DSM, and he resigned from the Board as of April 1, 2021. Mr. Goppelsroeder does not beneficially own any shares of Amyris common stock directly and disclaims beneficial ownership of all shares of Amyris common stock that are or may be beneficially owned by DSM or any of its affiliates.

(11) Shares beneficially owned by Dr. Kung include (i) 16,315,362 shares of common stock beneficially owned by Vivo, over which Dr. Kung may be deemed to share voting and dispositive power and (ii) 9,932 shares of common stock issuable upon exercise of stock options that were exercisable within 60 days of March 1, 2021. Dr. Kung was appointed to the Board on November 2, 2017 as the designee of Vivo. Dr. Kung disclaims beneficial ownership over shares of Amyris common stock that are or may be beneficially owned by Vivo except to the extent of his pecuniary interest therein.

(12) Shares beneficially owned by Mr. McCann include 4,216 shares of common stock issuable upon exercise of stock options that were exercisable within 60 days of March 1, 2021.

(13) Shares beneficially owned by Mr. Mills include 6,932 shares of common stock issuable upon exercise of stock options that were exercisable within 60 days of March 1, 2021.

(14) Shares beneficially owned by Ms. Piwnica include (i) 5,743,038 shares beneficially owned by Naxyris, over which Ms. Piwnica may be deemed to share voting and dispositive power, and (ii) 13,731 shares of common stock issuable upon exercise of stock options that were exercisable within 60 days of March 1, 2021. Ms. Piwnica was designated to serve as a director by Naxyris. Ms. Piwnica indirectly owns 100% of Naxyris, through Arianna S.A.

(15) Shares beneficially owned by Dr. Yang include 12,531 shares of common stock issuable upon exercise of stock options that were exercisable within 60 days of March 1, 2021.
(16) Shares beneficially owned by Mr. Alvarez include 30,000 shares of common stock issuable upon exercise of stock options that were exercisable within 60 days of March 1, 2021.
(17) Shares beneficially owned by Mr. Han include 6,328 shares of common stock issuable upon exercise of stock options that were exercisable within 60 days of March 1, 2021.
(18) Shares beneficially owned by all of our executive officers and directors as a group include the shares of common stock described in footnotes 6 through 17 above.

Executive Officers

The following table provides the names, ages, and offices of each of our current executive officers as of March 1, 2021:

Name	Age	Position
John Melo	55	Director, President and Chief Executive Officer
Han Kieftenbeld	55	Chief Financial Officer and Chief Administration Officer
Eduardo Alvarez	57	Chief Operating Officer
Nicole Kelsey	54	General Counsel and Secretary

John Melo

See above under "Proposal 1—Director Biographies"

Han Kieftenbeld

Han Kieftenbeld has served as our Chief Financial Officer since March 2020 and our Chief Administration Officer since July 2020. Mr. Kieftenbeld has over 25 years of international business leadership, finance and operations experience in food, health and nutrition end-markets. Previously, from April 2016 to April 2019, Mr. Kieftenbeld served as Senior Vice President and Chief Financial Officer of Innophos Holdings, Inc., a leading international science-based producer of essential ingredients for health and nutrition, food and beverage and industrial brands. From June 2014 to July 2015, Mr. Kieftenbeld served as the Global Chief Financial Officer at AB Mauri, a worldwide leader in bakery ingredients. Prior to that, Mr. Kieftenbeld held finance and operations roles of increasing reach and impact, including serving as Global Chief Procurement Officer of Ingredion Incorporated, and Global Chief Financial Officer of National Starch. Mr. Kieftenbeld started his career at Unilever in the Netherlands. In 2006, Mr. Kieftenbeld earned a joint Master of Business Administration degree from New York University Stern School of Business, London School of Economics and Political Science, and the HEC School of Management, Paris. He holds a Bachelor of Science degree in Business Economics and Accounting from Windesheim University in the Netherlands.

Eduardo Alvarez

Eduardo Alvarez has served as our Chief Operating Officer since October 2017. Mr. Alvarez has over 30 years of global operations experience both running and advising growth companies. Previously, he served as Global Operations Strategy Leader for PricewaterhouseCoopers LLP (PwC). During his tenure, Mr. Alvarez co-led the integration of his prior company, Booz & Company, following its acquisition by PwC. In that role, he grew operations into a global practice with $1.5 billion in revenue and 4,000 employees. Mr. Alvarez's assignments focused on delivering structural cost improvements while also driving sustained revenue growth. His experience also includes roles at Booz Allen Hamilton, General Electric and AT&T. Alvarez holds a Master of Business Administration degree from Harvard Business School, a Master's of Science in Mechanical Engineering in Computer Control and Manufacturing from the University of California, Berkeley, and a Bachelor of Science degree in Mechanical Engineering from the University of Michigan. Mr. Alvarez is a board member of The Chicago Council of Global Affairs.

Nicole Kelsey

Nicole Kelsey has served as our General Counsel and Secretary since August 2017. Ms. Kelsey has over 25 years of experience as an executive leader for public companies with international operations. Her areas of expertise

range from international M&A to U.S. securities laws and multi-jurisdictional corporate governance, complex securities and commercial litigation, regulatory matters, investor and employee communications, and compliance. Prior to joining Amyris, she served as General Counsel and Secretary of Criteo, a global leader in commerce marketing based in Paris with global operations, for over three years. Prior to joining Criteo, Ms. Kelsey was the senior securities lawyer for Medtronic, a global leader in medical technology; she served as head M&A attorney for CIT Group, Inc.; was the general counsel and chief compliance officer of a private merchant bank; and was the senior corporate attorney for the international conglomerate Vivendi. Before going in-house, Ms. Kelsey practiced with the law firms of White & Case and Willkie, Farr & Gallagher, in Paris and New York. A Fulbright scholar, Ms. Kelsey holds a Juris Doctor degree from Northwestern Pritzker School of Law and a Bachelor of Arts degree in Political Science and International Studies from The Ohio State University, and is admitted to practice law in New York and Minnesota.

Executive Compensation

Summary Compensation Table

Name and Principal Position	Year	Salary ($)	Bonus ($)	Stock Awards ($)(1)	Option Awards ($)(1)	Non-Equity Incentive Plan Compensation ($)(2)	All Other Compensation ($)	Total ($)
John Melo	2020	646,667(3)	—	—	—	698,246	—	1,344,913
President and CEO	2019	630,000	185,320(4)	144,424	11,680	333,613(5)	1,261(6)	1,306,298
Han Kieftenbeld	2020	332,500(7)	125,000(8)	745,050	187,104	359,666	675(9)	1,749,995
CFO and CAO								
Eduardo Alvarez	2020	500,000	—	579,000	145,555	458,325	1,440(10)	1,684,320
COO	2019	416,667(11)	—	—	—	245,825	2,701(12)	665,192

(1) The amounts in the "Stock Awards" and "Option Awards" columns reflect the aggregate grant date fair value of such awards computed in accordance with FASB ASC Topic 718, excluding the effect of estimated forfeitures. The assumptions made in the valuation of the awards are discussed in Note 12, "Stock-based Compensation" of "Notes to Consolidated Financial Statements" in our Annual Report on Form 10-K for the fiscal year ended December 31, 2020. These amounts do not correspond to the actual value that may be recognized by our named executive officers.

(2) As required under applicable rules of the SEC, payments under our 2020 cash bonus plan are included in the column entitled "Non-Equity Incentive Plan Compensation," as they were based upon the satisfaction of pre-established performance targets, the outcome of which was substantially uncertain.

(3) Mr. Melo's base salary was increased from $630,000 to $650,000 effective March 1, 2020.

(4) Includes a discretionary cash bonus paid to Mr. Melo in the amount of $185,320 in recognition of the value lost on the voiding of certain equity awards granted to him in May 2017 that inadvertently exceeded the annual per-participant award limit contained in the 2010 EIP.

(5) In March 2020, the LDICC approved a discretionary increase in the cash bonus to be paid to Mr. Melo for the annual period of 2019, from $74,119 to $95,000, in recognition of his contributions.

(6) Refers to taxes associated with long term disability insurance.

(7) Mr. Kieftenbeld was appointed our CFO effective March 16, 2020, and also appointed CAO effective July 1, 2020. His annual base salary for 2020 was $420,000.

(8) Represents a sign-on bonus paid in connection with Mr. Kieftenbeld's appointment as CFO.

(9) Includes Section 401(k) plan employer matching contribution.

(10) Includes $1,440 as a stipend for waiving medical benefits.

(11) Mr. Alvarez's base salary was increased from $400,000 to $500,000 effective November 1, 2019.

(12) Includes $1,440 as a stipend for waiving medical benefits and $1,261 for taxes associated with long term disability insurance premiums.

Narrative Disclosure to Summary Compensation Table

The following narrative describes the material terms of our named executive officers' annual compensation, including base salaries, cash bonuses, our equity award granting practices and severance benefits and explanations of decisions for cash and equity compensation during 2020. As noted below under "Agreements with Executive Officers," except for certain terms contained in their employment offer letters, equity award agreements and participation agreements entered into in connection with our Executive Severance Plan, none of our named executive officers has entered into a written employment agreement with us. The following narrative should be read in conjunction with the compensation tables contained elsewhere in this Proxy Statement.

Compensation Philosophy and Objectives and Elements of Compensation

The primary objectives of our executive compensation program in 2020 were to:

- Attract, retain, and motivate highly talented employees that are key to our success;
- Reinforce our core values and foster a sense of ownership, urgency and entrepreneurial spirit;
- Link compensation to individual, team, and company performance (as appropriate by employee level);
- Emphasize performance-based compensation for individuals who can most directly impact stockholder value; and
- Provide exceptional pay for delivering exceptional results.

Our success depends, among other things, on attracting and retaining executive officers with experience and skills in a number of different areas as we continue to drive improvements in our technology platform and production process, pursue and establish key commercial relationships, develop and commercialize products and establish a reliable supply chain and manufacturing organization.

Our business continues to be in an early stage of development, with cash management being one key consideration for our strategy and operations. Accordingly, for 2020, we intended to provide a competitive compensation program that would enable us to attract and retain the top executives and employees necessary to develop our business, while being prudent in the management of our cash and equity. Based on this approach, we continued to aim to reward annual and long-term performance with a total compensation package that included a mix of both cash and equity. Our compensation program was intended to align the interests of our executive officers, key employees and stockholders and to drive the creation of stockholder value by providing long-term incentives through equity-based awards.

Our intent and philosophy in designing compensation packages at the time of hiring of new executives is based on providing compensation that we believe is sufficient to enable us to attract the necessary talent to grow our business, within prudent limitations as discussed above. Compensation of our executive officers after the initial period following their hiring is influenced by the amounts of compensation that we initially agreed to pay them, as well as by our evaluation of their subsequent performance, changes in their levels of responsibility, retention considerations, prevailing market conditions, our financial condition and prospects, and our attempt to maintain an appropriate level of internal pay parity in the compensation of existing executive officers relative to the compensation paid to more recently hired executives.

We compensate our executive officers with a combination of salaries, cash bonuses and equity awards. We believe this combination of cash and equity compensation, subject to strategic allocation among such components, is largely consistent with the forms of compensation provided by other companies with which we compete for executive talent, and, as such, matches the expectations of our executive officers and the market for executive talent. We also believe that this combination provides appropriate incentive levels to retain our executives, reward them for performance in the short term and induce them to contribute to the creation of value in Amyris over the long term. We view the different components of our executive compensation program as distinct, each serving particular functions in furthering our compensation philosophy and objectives, and together, providing a holistic approach to achieving such philosophy and objectives.

Base Salary. We believe that we must maintain base salary levels at or above market to attract and retain the executive officers we need and that it is important for our executive officers to perceive that over time they will continue to have the opportunity to earn a salary that they regard as competitive. The LDICC reviews and adjusts, as appropriate, the base salaries of our executive officers on an annual basis, and makes decisions with respect to the base salaries of new executives at the time of hire. In making such determinations, the LDICC considers

several factors, including our overall financial performance, the individual performance of the executive officer in question (including, for executives other than our CEO, the recommendation of our CEO based on a performance evaluation of the executive officer in question), the executive officer's potential to contribute to our annual and longer-term strategic goals, the executive officer's scope of responsibilities, qualifications and experience, competitive market practices for base salary, prevailing market conditions and internal pay parity.

Cash Bonuses. We believe the ability to earn cash bonuses should provide incentives to our executive officers to effectively pursue goals established by our Board and should be regarded by our executive officers as appropriately rewarding effective performance against these goals. For 2020, the LDICC adopted a cash bonus plan for our executive officers, the details of which are described below under "2020 Compensation." This cash bonus plan is internally referred to as the Corporate Incentive Plan. The 2020 cash bonus plan included company performance goals and individual performance goals and was structured to motivate our executive officers to achieve our short-term financial and operational goals and to reward exceptional company and individual performance. In particular, our 2020 cash bonus plan was designed to provide incentives to our executive officers to achieve 2020 company financial and operational targets on a quarterly and annual basis, together with individual performance criteria that was considered for annual performance achievement. In general, target bonuses for our executive officers are initially set in their offer letters based on similar factors to those described above with respect to the determination of base salary. For subsequent years, target bonuses for our executive officers may be adjusted by the LDICC based on various factors, including any modifications to base salary, competitive market practices and the other considerations described above with respect to adjustments in base salary.

Equity Awards. Our equity awards are designed to be sufficiently competitive to allow us to attract and retain talented and experienced executives. In 2020, we granted both stock option and restricted stock unit ("RSU") awards to our executive officers. Stock option awards for executive officers are granted with an exercise price equal to the fair market value of our common stock on the date of grant; accordingly, such stock option awards will have value to our executive officers only if the market price of our common stock increases after the date of grant. RSU awards represent the right to receive full-value shares of our common stock without payment of any exercise or purchase price. We have a practice that began in 2016 to place a greater emphasis on RSU awards, as compared to stock options, to increase the perceived value of equity awards granted to our executive officers. The relative weighting between the stock option and RSU awards granted to our executive officers is based on the LDICC's review of market practices. In 2018, the LDICC approved special equity awards to our CEO consisting of a stock option subject to performance-based vesting conditions and RSUs with time-based vesting requirements, as described in more detail below under "2020 Compensation—Equity Awards—2018 CEO Equity Awards."

We typically grant stock option awards with four-year vesting schedules. Stock option grants include a one year "cliff", where the stock option award vests as to 25% of the shares of our common stock subject to the award after one year, and monthly thereafter, subject to continued service through each vesting date. Our RSU awards have generally been granted with three-year vesting schedules, vesting as to 1/3rd of the units subject to the award annually, subject to continued service through each vesting date. We believe such vesting schedules are generally consistent with the option and RSU award granting practices of our peer group companies. In March 2020, the LDICC approved new hire equity awards to our CFO consisting of stock option awards with three-year vesting schedule and RSU awards with two-year vesting schedule. In addition, in 2018, we granted stock option and/or RSU awards with non-standard vesting terms to certain of our executive officers, including our CEO, the details of which are described below under "2020 Compensation—Equity Awards—2018 CEO Equity Awards."

We grant equity awards to our executive officers in connection with their hiring, or, as applicable, their promotion from other roles at the Company. The size of initial equity awards is determined based on the executive's position with us and takes into consideration the executive's base salary and other compensation as well as an analysis of the grant and compensation practices of our peer group companies in connection with establishing our overall compensation policies. The initial equity awards are generally intended to provide the executive with an incentive

to build value in the Company over an extended period of time, which is consistent with our overall compensation philosophy. Insofar as we have to date incurred operating losses and consumed substantial amounts of cash in our operations, and to compensate for cash salaries and cash bonus opportunities that were, in certain cases, lower than those offered by competing employers, we have sought to attract executives to join us by granting equity awards that would have the potential to provide significant value if we are successful.

We grant additional equity awards in recognition of commendable performance, in connection with significant changes in responsibilities, and/or in order to better ensure appropriate retention and incentive opportunities from time to time. Further, equity awards are a component of the annual compensation package of our executive officers.

Role of Stockholder Say-on-Pay Votes. At our 2011, 2014, 2017, and 2020 annual meetings of stockholders, our stockholders voted, on an advisory basis, on the compensation of our named executive officers (commonly referred to as a "stockholder say-on-pay vote"). A majority of the votes cast were voted in favor of the non-binding advisory resolutions approving the compensation of our named executive officers as summarized in our 2011, 2014, 2017, and 2020 Proxy Statements. In 2020, 98% of the votes cast on the stockholder say-on-pay proposal approved, on a non-binding advisory basis, the compensation of our named executive officers as summarized in our 2020 Proxy Statement. The LDICC believes that this affirms our stockholders' support of our approach to executive compensation, and, accordingly, did not materially change its approach to executive compensation in 2020 and does not intend to do so in 2021. In addition, in 2017 our stockholders approved, and our Board subsequently adopted, a three-year interval for conducting future stockholder say-on-pay votes. Our stockholders will again be voting, on an advisory basis, on the compensation of our named executive officers at our 2023 annual meeting.

Role of Compensation Consultant. Under its charter, the LDICC has the authority, at Amyris's expense, to retain legal and other consultants, accountants, experts and compensation or other advisors of its choice to assist the LDICC in connection with its functions. Since 2012, the LDICC has retained Compensia, Inc. ("Compensia"), a national compensation consulting firm, to provide advice and guidance on our executive compensation policies and practices and relevant information about the executive compensation practices of similarly situated companies.

In connection with an annual review of our executive compensation program for 2020, Compensia provided the following services:

- reviewed and provided recommendations on the composition of Amyris's compensation peer group, and provided compensation data relating to certain executives at the selected peer group companies;
- conducted a review of the total compensation arrangements for executive officers of Amyris;
- provided advice on executive officers' compensation, including composition of compensation for base salary, short-term incentive (cash bonus) plan and long-term incentive (equity) plans;
- provided advice on executive officers' cash bonus plan;
- assisted with executive equity program design, including analysis of equity mix, aggregate share usage and target grant levels;
- provided advice and recommendations regarding executive perquisites and Amyris's executive severance plan;
- updated the LDICC on emerging trends/best practices and regulatory requirements in the area of executive and director compensation, including equity and cash compensation;
- provided advice and recommendations regarding certain non-executive employee compensation arrangements and equity grants;

- assisted in the preparation of materials for executive compensation proposals in advance of Committee meetings, including 2020 compensation levels for certain of our executive officers and the design of our cash bonus, equity, severance and change of control programs and other executive benefit programs; and
- reviewed and advised the LDICC on materials relating to executive compensation prepared by management for Committee consideration.

The LDICC determined that Compensia did not have any relationships with Amyris or any of its officers or directors or any conflicts of interest that would impair Compensia's independence.

Compensia, under the direction of the LDICC, may continue to periodically conduct a review of the competitiveness of our executive compensation program, including base salaries, cash bonus opportunities, equity awards and other executive benefits, by analyzing the compensation practices of companies in our compensation peer group, as well as data from third-party compensation surveys. Generally, the LDICC uses the results of such analyses to assess the competitiveness of our executive officers' total compensation, and to determine whether each component of such total compensation is properly aligned with reasonable and responsible practices among our peer companies.

The LDICC also retained Compensia for assistance in reviewing and making recommendations to our Board regarding the compensation program for our non-employee directors when it was originally adopted in late 2010 and again when such program was subsequently amended in December 2015 and November 2016, and to provide market data and materials to the LDICC.

In December 2019, the LDICC reviewed the independence of Compensia under applicable compensation consultant independence rules and standards and determined that Compensia had no conflict of interest with Amyris.

Compensation Decision Process

Under the charter of the LDICC, our Board has delegated to the LDICC the authority and responsibility to discharge the responsibilities of the Board relating to the compensation of our executive officers. This includes, among other things, review and approval of the compensation of our executive officers and of the terms of any compensation agreements with our executive officers. For more information regarding the functions and composition of the LDICC, please refer to "Proposal 1—Election of Directors—Board Committees and Meetings" above.

In general, the LDICC is responsible for the design, implementation and oversight of our executive compensation program. In accordance with its charter, the LDICC determines the annual compensation of our CEO and other executive officers and reports its compensation decisions to our Board. The LDICC also administers our equity compensation plans, including our 2020 EIP and 2010 Employee Stock Purchase Plan. Generally, our Human Resources, Finance and Legal departments work with our CEO to design and develop new compensation programs applicable to our executive officers and non-employee directors, to recommend changes to existing compensation programs, to recommend financial and other performance targets to be achieved under those programs, to prepare analyses of financial data, to prepare peer compensation comparisons and other Committee briefing materials, and to implement the decisions of the LDICC. Members of these departments and our CEO also meet separately with Compensia to convey information on proposals that management may make to the LDICC, as well as to allow Compensia to collect information about Amyris to develop its recommendations. In addition, our CEO conducts reviews of the performance and compensation of our other executive officers, and based on these reviews and input from Compensia and our Human Resources department, makes recommendations regarding compensation for such executive officers directly to the LDICC. For our CEO's compensation, Compensia reviews relevant market data with the LDICC, and makes a recommendation regarding our CEO's compensation to the LDICC.

The Board has established a Management Committee for Employee Equity Awards ("MCEA"), consisting of our Chief People Officer, our CFO and our CEO. The MCEA may grant equity awards to employees who are not executive officers (as that term is defined in Section 16 of the Exchange Act and Rule 16a-1 promulgated under the Exchange Act) of Amyris, provided that the MCEA is only authorized to grant equity awards that meet grant guidelines approved by the Board or LDICC. These guidelines set forth, among other things, any limit imposed by the Board or LDICC on the total number of shares of our common stock that may be subject to equity awards granted to employees by the MCEA, and any requirements as to the size of an award based on the seniority of an employee or other factors.

2020 Compensation

Background. In designing the compensation program and making decisions for our executive officers for 2020, the LDICC sought to balance achievement of critical operational goals with retention of key personnel, including our executive officers. Accordingly, the LDICC focused in particular on providing a strong equity compensation program in order to provide strong retention incentives through challenging periods. It also focused on cash management in setting target total cash compensation (and associated salary and bonus target levels) for our executive officers. Another key theme for 2020 was establishing strong incentives to drive our performance, including continued emphasis on company performance goals over individual goals in the 2020 cash bonus plan and on equity compensation for longer-term upside potential and sharing in company growth.

Base Salaries. In February 2020, the LDICC reviewed the base salaries, bonus targets and target total cash compensation of certain of our executive officers against applicable compensation peer group and industry survey data, and as a result of such analysis, as well as consideration of the factors described above under "Compensation Philosophy and Objectives and Elements of Compensation—Base Salary," approved, effective March 1, 2020, an increase to the base salary of our CEO from $630,000 to $650,000.

Cash Bonuses. In January 2020, the LDICC adopted a 2020 cash bonus plan for our executive officers, which was amended in February 2020, May 2020, and June 2020. Under the plan, as amended in May and June 2020, our executive officers were eligible for bonuses based on the achievement of company metrics for each quarter in 2020, with a portion of their target bonus allocated to annual company and individual performance. The 2020 cash bonus plan was intended to provide a balanced focus on both our long-term strategic goals and shorter-term quarterly operational goals. The 2020 cash bonus plan provided for funding and payout of cash bonus awards if the company achieved the target levels set for GAAP revenue (quarterly and annual), operating expense (quarterly and annual), product margin (quarterly) and gross margin (annual). Payouts under the 2020 cash bonus plan were made following a review of our results and performance each quarter and, for the fourth quarter and annual components, a review occurred in March 2021. The 2020 cash bonus plan provided for a 60% weighting for quarterly achievement (with each quarter worth 15% of the total bonus fund for the year) and 40% for full year 2020 achievement.

The total funding possible under the 2020 cash bonus plan was based on a cash value (or the "target bonus fund") determined by the executive officers' target bonus levels. Target bonus levels for our executive officers in 2020 varied by individual, but were generally set between 50% and 100% of their annual base salary. In February 2020, the LDICC reviewed our executive officers' bonus targets as part of its review of target total cash compensation for similar roles among executive officers at companies in the compensation peer group, as supplemented by relevant industry survey data, and, as a result of such analysis, as well as consideration of the factors described above under "Compensation Philosophy and Objectives and Elements of Compensation—Cash Bonuses," approved no changes to the target bonus level for our executive officers.

The quarterly and annual funding of the 2020 cash bonus plan was based on achievement of the following company performance metrics for the applicable quarter and full year 2020: GAAP revenue (weighted 50% for each quarterly and annual period), operating expenses (weighted 30% for each quarterly and annual period), product margin (weighted 20% for the quarterly period), and gross margin (weighted 20% for the annual period). For each quarterly period and for the annual period under the 2020 cash bonus plan, "threshold," "target" and "superior" performance levels were set for each applicable performance metric, which performance levels were intended to capture the relative difficulty of achievement of that metric.

If we were to achieve the "threshold" level for any performance metric, we would receive 50% funding for that metric. If the collective funding of all performance metrics was below 50%, we would receive no funding. If we were to achieve between the "threshold and "target" levels for any performance metric, we would receive pro rata funding between 50% and 100% for that metric. If we were to achieve between the "target" and "superior" levels for any performance metric, we would receive pro rata funding between 100% and 200% for that metric. Funding was capped at 200% of target for each performance metric regardless of performance exceeding the "superior" level.

Any payouts for the quarterly bonus periods would be the same as the funded level (provided the recipient meets eligibility requirements), subject to the final discretion of the LDICC. Payouts for the annual bonus period would be made from the aggregate funded amount in the discretion of the LDICC based on company and individual performance, and could range from 0% to 200% of an individual's funded amount for the annual bonus period. The LDICC chose to emphasize company performance goals for the quarterly and annual bonus plan periods given the critical importance of our short term strategic goals, but also to retain reasonable incentives and rewards for exceptional individual performance, recognizing the value of such incentives and rewards to our operational performance and to individual retention. In August 2020, the LDICC approved a cash bonus to be paid to Mr. Melo for the second quarter of 2020 at 200% of his individual funded amount, in recognition of his efforts to complete a successful financing in June 2020. In addition, pursuant to an Offer Letter, dated February 6, 2020, between the Company and Mr. Kieftenbeld (the "Offer Letter"), Mr. Kieftenbeld is eligible to receive an annual performance-based bonus, with an initial aggregate annual bonus target of $378,000, subject to the terms of the applicable executive bonus plan adopted each year.

Based on the foregoing bonus plan structure, individual bonuses were awarded each quarter based on the LDICC's assessment of company achievement, and with respect to the annual bonus, the LDICC's assessment of company achievement as well as each executive officer's contributions to such achievement, his or her progress toward achieving his or her individual goals, and his or her demonstrating our core values. Actual payment of any bonuses with respect to 2020 remained subject to the final discretion of the LDICC.

Company Performance Goals. Company performance during 2020 was measured and weighted against quarterly and annual targets established for GAAP revenue, operating expenses, product margin, and gross margin, as applicable. The quarterly and annual weighting and achievement for each applicable metric are described below.

These targets were initially approved by the LDICC in February 2020. The annual and first quarter targets were then amended in May 2020, and the second, third and fourth quarter targets were adopted and amended at subsequent meetings of the LDICC during 2020. The applicable targets for each quarter were discussed and evaluated based on quarterly and annual performance (in March 2021, the LDICC discussed and evaluated the fourth quarter as well as the full year 2020 results) and continued development of our business and operating plans for 2020 and beyond. Achievement levels were determined in the discretion of the LDICC following each period under the 2020 cash bonus plan.

Individual Performance Goals. For the annual portion of the 2020 cash bonus plan tied to individual performance, the LDICC considered several factors, including the following:

- Our CEO's performance reflects his overall leadership of the Company. Under Mr. Melo's leadership, the Company delivered strong year-on-year sales revenue growth, strengthened the R&D development pipeline, enhanced customer impact, and improved overall Company operations. He also led on advancing strategic initiatives and transactions.
- Mr. Kieftenbeld's performance reflects his leadership of the Company's Finance, Human Resources, IT and Corporate Communications functions. Under his leadership, the Company made significant improvements in our financial processes, internal controls, cash management, and investor relations activities. He oversaw the improvements to the Company's capital structure by significantly lowering debt and engaging new institutional equity investors.
- Mr. Alvarez's performance reflects his leadership of the Company's manufacturing, engineering, environmental health & safety, and supply chain functions. Under his leadership, the Company continued to demonstrate a strong safety track record, scale the development of molecules into production, improve consumer brand supply chain operations, manage a global network of contract manufacturers, and make progress with the construction of the new Brazil manufacturing facility.

The LDICC considered a variety of factors in determining, in its discretion, to award payouts under the 2020 cash bonus plan. In addition to the levels of company achievement (for the quarterly and annual portions) and individual performance (for the annual portion) categories, the LDICC considered our cash needs as well as the level of performance of each named executive officer in achieving company results and their respective assigned individual goals. Based on the foregoing, and taking into account the factors described above, the LDICC approved the following cash bonus awards under the 2020 cash bonus plan:

Name	2020 Cumulative Quarterly Bonus Payouts ($)	2020 Annual Portion Bonus Payout ($)	2020 Aggregate Annual and Quarterly Bonus Payouts ($)	Annual Bonus Target ($)	2020 Actual Bonus Earned as a % of Target Bonus
John Melo[1]	348,286	349,960	698,246	664,667	105.1%
Han Kieftenbeld[2]	170,666	189,000	359,666	299,250	120.2%
Eduardo Alvarez	218,325	240,000	458,325	500,000	91.7%

(1) Mr. Melo's base salary was increased from $630,000 to $650,000, effective March 1, 2020.
(2) Mr. Kieftenbeld was appointed our CFO effective March 16, 2020, and also appointed CAO effective July 1, 2020. Accordingly, his bonus payout was pro-rated in the first quarter of 2020.

We believe that the payment of these awards was appropriate because the 2020 cash bonus plan appropriately held our named executive officers accountable for achievement of company and individual goals, and the payouts were reasonable and appropriate in light of our progress towards our business objectives.

Equity Awards. In August 2020, the LDICC approved annual equity awards for the executive officers, excluding our CEO (the "focal awards"), including a grant to each of Messrs. Alvarez and Kieftenbeld of an option to purchase 50,000 shares of our common stock and 150,000 RSUs with the terms described below. In addition, the LDICC approved new hire equity awards for Mr. Kieftenbeld in connection with his hiring in March 2020 (the "CFO new hire awards"), consisting of an option to purchase 22,500 shares of our common stock and 67,500 RSUs with terms described below. In addition, in 2018, the LDICC approved special equity awards to our CEO consisting of a stock option subject to performance-based vesting conditions and RSUs with time-based vesting requirements, as described in more detail below under "2018 CEO Equity Awards."

With respect to the focal awards, the LDICC determined the allocation of equity awards between stock options and RSUs after consultation with Compensia, in evaluating the practices of our competitive market and in consultation with management, taking into consideration, among other things, the appropriate balance between rewarding previous performance, retention objectives, upside value potential tied to our and the executive officer's future performance and the mix of the executive officer's current equity holdings. The size of the focal awards varied among the applicable named executive officers based on the value of unvested equity awards already held by him or her, his or her relative contributions during 2019 and anticipated levels of responsibility for key corporate objectives in 2020. The allocation and size of the CFO new hire awards was determined by his employment offer letter with the Company entered into in February 2020 (the "CFO offer letter").

In accordance with our policy regarding equity award grant dates, the focal awards were granted on August 10, 2020, the first business day of the week following the week in which such awards were approved, with the exercise price of the option being set at $3.86 per share, the closing price of our common stock on Nasdaq on such date, in accordance with the terms of the 2020 EIP. The stock option under the focal awards vests over 4 years, with 25% of the shares subject to the awards vesting one year from the vesting commencement date on September 1, 2020, and 1/48 of the shares subject to the awards vesting monthly thereafter. The RSUs under the focal awards vest in three equal annual installments on September 1 of each of 2021, 2022 and 2023.

In accordance with the CFO Offer Letter, the CFO new hire awards were granted on March 30, 2020, the first business day of the week following the week in which such awards were approved, with the exercise price of the option being set at $2.46 per share, the closing price of our common stock on Nasdaq on such date, in accordance with the terms of the 2010 EIP. The stock options under the CFO new hire awards vest over 3 years, with 25% of the shares underlying the stock option vesting upon completion of 12 months of employment and the remainder vesting over the following two years in 24 equal monthly installments upon completion of each additional month of employment. The RSUs under the CFO new hire awards vest in two equal annual installments on June 1 of each of 2021 and 2022.

2018 CEO Equity Awards

Because of the direct relationship between the value of our equity awards and the fair market value of our common stock, and in order to incentivize our CEO in a manner that aligns his interests with our long-term strategic direction and the interests of our stockholders and reduces the possibility of business decisions that favor short-term results at the expense of long-term value creation, in April 2018 the LDICC approved, with the support of the Board, a grant to our CEO of (i) an option to purchase 3,250,000 shares of our common stock, such award being subject to performance-based vesting conditions as described below (the "CEO Performance Option"), and (ii) 700,000 RSUs with the terms described below (the "CEO RSU" and together with the CEO Performance Option, the "2018 CEO Equity Awards"). The grant of the 2018 CEO Equity Awards was contingent upon approval by our stockholders of both the 2018 CEO Equity Awards and certain amendments to the 2010 EIP to, among other things, increase the annual per-participant award limit thereunder, which approvals were obtained at our 2018 annual meeting of stockholders held on May 22, 2018. In accordance with our policy regarding equity award grant dates, the CEO Equity Awards were granted on May 29, 2018, the first business day of the week following the week in which such awards were approved, with the exercise price of the CEO Performance Option being set at $5.08 per share, the closing price of our common stock on Nasdaq on such date, in accordance with the terms of the 2010 EIP.

CEO Performance Option. The CEO Performance Option is a performance-based nonqualified stock option and therefore the CEO will receive compensation from such stock option only to the extent that the Company achieves the applicable performance milestones.

Performance Metrics & Vesting. The CEO Performance Option is divided into four tranches as described in the table below (each a "Tranche"). Each of the four Tranches of the CEO Performance Option will vest on or after the

applicable vesting date for the Tranche (the "Earliest Vesting Date") provided: (i) the Board or the LDICC certify that both the EBITDA Milestone and the Stock Price Milestone (collectively, the "Milestones") for such Tranche have been met and (ii) Mr. Melo remains our CEO on the applicable vesting date. Any Milestone may be met before, at or after the applicable Earliest Vesting Date for a Tranche provided that the Milestone is met during its applicable Measurement Period. The EBITDA Measurement Period starts January 1, 2018 and ends December 31, 2021. The Stock Price Measurement Period starts January 1, 2018 and ends December 31, 2022. In the event that either the EBITDA Milestone or the Stock Price Milestone is not yet achieved for a Tranche, no shares attributable to such Tranche will be eligible to vest on such Tranche's Earliest Vesting Date; provided, however, the Milestones will remain eligible to be achieved during the remaining EBITDA Measurement Period and Stock Price Measurement Period, as applicable. For clarity, upon the achievement of both the applicable EBITDA Milestone and Stock Price Milestone for a Tranche, the shares attributable to such Tranche may not vest until such Tranche's Earliest Vesting Date, and only if Mr. Melo remains the CEO on such date. More than one Tranche may vest simultaneously provided that: the Earliest Vesting Date for each applicable Tranche has occurred, the requisite EBITDA Milestone and Stock Price Milestone for each applicable Tranche have been met and Mr. Melo continues as the CEO through the applicable date of vesting. The table below sets forth the number of shares, EBITDA Milestone, Stock Price Milestone and Earliest Vesting Date for each Tranche:

Tranche	Number of Shares	EBITDA Milestone ($M)	Stock Price Milestone	Earliest Vesting Date
1	750,000	$ 10	$15	July 1, 2019
2	750,000	$ 60	$20	July 1, 2020
3	750,000	$ 80	$25	July 1, 2021
4	1,000,000	$100	$30	July 1, 2022

EBITDA Milestone. The EBITDA Milestone for a Tranche is achieved if Amyris's EBITDA (as described below) equals or exceeds the EBITDA Milestone set forth in the table above for such Tranche for any fiscal year during the EBITDA Measurement Period. The EBITDA Measurement Period starts January 1, 2018 and ends December 31, 2021. The Board or the LDICC will measure and certify the level of achievement of the EBITDA Milestone as of the end of each fiscal year within the EBITDA Measurement Period.

For purposes of the EBITDA Milestone, "EBITDA" shall mean Amyris's net (loss) income attributable to common stockholders for the relevant fiscal year during the EBITDA Measurement Period as determined in accordance with U.S. Generally Accepted Accounting Principles ("GAAP") and as reported by Amyris in its audited financial statements contained in its Annual Report on Form 10-K for the relevant fiscal year filed with the SEC, plus interest expense (benefit), provision for income taxes, depreciation and amortization for the same fiscal year as reflected in the audited financial statements. For the avoidance of doubt, there will be no adjustment to the reported net (loss) income attributable to common stockholders for stock based compensation in determining EBITDA.

In the event of unusual non-recurring events such as acquisition activities or divestitures of significant assets or changes in applicable accounting rules, as a result of which the calculation of Amyris's EBITDA during the EBITDA Measurement Period is increased or decreased by 10% or more in determining Amyris's audited financial statements contained in its Annual Report on Form 10-K filed with the SEC for the most recently completed fiscal year, the Board or, if the Board delegates authority to the LDICC, the LDICC may provide for one or more equitable adjustments to the EBITDA Milestones to preserve the original intent regarding the EBITDA Milestones at the time of the initial award grant.

As of the date of this Proxy Statement, none of the EBITDA Milestones for any of the Tranches had been achieved.

Stock Price Milestone. The Stock Price Milestone for a Tranche is achieved if each of (i) the average of the daily closing prices of our common stock on the Nasdaq Global Select Market for any one hundred and eighty (180)-consecutive day period starting at any time after the last day of the fiscal year in which the applicable EBITDA Milestone was achieved for the applicable Tranche and ending during the Stock Price Measurement Period and (ii) the average of the daily closing prices of our common stock on the Nasdaq Global Select Market for a thirty (30)-consecutive day period ending on the date on which the 180-day average stock price set forth in the table is achieved for the applicable Tranche equals or exceeds the Stock Price Milestone for the applicable Tranche during the Stock Price Measurement Period. The Stock Price Measurement Period starts January 1, 2018 and ends December 31, 2022.

The Stock Price Milestone will be adjusted to reflect events such as a stock split or recapitalization in order to prevent diminution or enlargement of the benefits or potential benefits intended to be made available under the CEO Performance Option.

The LDICC considers the Stock Price Milestone to be a challenging hurdle and included the EBITDA Milestone to promote Amyris's continued focus on growth, sustainability and profitability. The LDICC selected EBITDA (as defined above) as the appropriate measure because it believes EBITDA is a metric that is commonly used for companies at this stage of development and because many of Amyris's stockholders use it to evaluate Amyris's performance and viability. It is a measure of cash generation from operations that does not disincentivize Amyris from making additional investments to grow further. The EBITDA Milestone is designed to ensure that Amyris maintains operating discipline but does not represent Amyris's target EBITDA for any future period. The LDICC included the Stock Price Milestone to drive sustained, long-term stockholder returns, and to further align Mr. Melo's compensation opportunity to long-term stockholder interests. In establishing the EBITDA Milestone and Stock Price Milestone, the LDICC carefully considered a variety of factors, including Amyris's growth trajectory and internal growth plans. The LDICC also reviewed special CEO equity awards approved by other public companies as a reference point for setting the magnitude and terms of the CEO Performance Option and CEO RSU.

As of the date of this Proxy Statement, none of the Stock Price Milestones for any of the Tranches had been achieved.

Term. The term of the CEO Performance Option is ten years from the date of the grant, unless Mr. Melo's employment with Amyris is terminated prior to such date. Accordingly, Mr. Melo will have ten years from the date of grant to exercise any portion of the CEO Performance Option that has vested on or prior to such date, provided that he remains employed at Amyris.

Post-Exercise Holding Period. Mr. Melo must hold at least fifty percent (50%) of the shares he acquires upon exercise of the CEO Performance Option (net of any shares sold to pay the exercise price and any tax withholding obligations with respect to the CEO Performance Option) for two years post-exercise.

The LDICC selected a two-year holding period in order to further align Mr. Melo's interests with Amyris stockholders' interests for two years following the exercise of any portion of the CEO Performance Option. Such alignment ensures that Mr. Melo will be focused on sustaining Amyris's success both before and after he exercises his CEO Performance Option.

Employment Requirement for Continued Vesting. Mr. Melo must continue to be employed as Amyris's CEO upon each vesting date in order for the corresponding Tranche to vest under the CEO Performance Option. If Mr. Melo is still employed at Amyris in a role other than CEO, he will no longer be able to vest under the CEO Performance Option but can continue to hold any unexercised, vested portion of the CEO Performance Option for the full term of the CEO Performance Option.

Termination of Employment. Except in the context of a change of control of Amyris, there will be no acceleration of vesting of the CEO Performance Option if the employment of Mr. Melo is terminated, or if he dies or becomes disabled. In other words, termination of Mr. Melo's employment with Amyris will preclude his ability to earn any then-unvested portion of the CEO Performance Option following the date of his termination.

Change of Control of Amyris. If Amyris experiences a change of control, such as a merger with or purchase by another company, vesting under the CEO Performance Option will not automatically accelerate.

In the event of a change of control, the performance under the CEO Performance Option will be determined as of the change of control. For this change of control determination, the EBITDA Milestone will be disregarded and a Stock Price Milestone relating to any Tranche that has not yet vested shall be achieved if the per share price (plus the per share value of any other consideration) received by the Company's stockholders in the change of control equals or exceeds the applicable Stock Price Milestone. To the extent a Stock Price Milestone for a Tranche is achieved upon a change of control, the shares specified for such Tranche will be subject to time-based vesting (the "COC Time-Based Options"), and such COC Time-Based Options shall vest upon the later of the date of the change of control and the Earliest Vesting Date applicable to such Tranche, subject to Mr. Melo remaining the CEO on each such vesting date. To the extent a Stock Price Milestone for a Tranche is not achieved as a result of the change of control, such Tranche will be forfeited automatically as of the immediately prior to closing of the change of control and never shall become vested. Notwithstanding the foregoing, if Mr. Melo is terminated without cause or resigns for good reason in connection with the change of control, any then unvested COC Time-Based Options will accelerate, subject to Mr. Melo's satisfaction of certain terms and conditions, including, but not limited to delivery of a release of claims, pursuant to the Severance Plan (as defined below), the terms of which are described below under "Severance Plan" and "Potential Payments upon Termination and upon Termination Following a Change in Control."

In addition, if the successor or acquiring corporation (if any) of Amyris refuses to assume, convert, replace or substitute the CEO Performance Option in connection with a change of control, 100% of Mr. Melo's COC Time-Based Options shall accelerate and become vested effective immediately prior to the change of control.

The treatment of the CEO Performance Option upon a change of control is intended to align Mr. Melo's interests with Amyris's other stockholders with respect to evaluating potential change of control offers.

Clawback. In the event of a restatement of Amyris's financial statements previously filed with the SEC as a result of material noncompliance with financial reporting requirements ("restated financial results"), Amyris will require forfeiture (or repayment, as applicable) of the portion of the CEO Performance Option in excess of what would have been earned or paid based on the restated financial results.

CEO RSU. The CEO RSU will vest in four equal annual installments on July 1 of each of 2019, 2020, 2021 and 2022, subject to Mr. Melo' s continued service on each vesting date. This four-year vesting schedule is longer than our typical three-year vesting schedule for RSUs granted to our executive officers and is intended to further align Mr. Melo's compensation opportunity to long-term stockholder interests and to promote retention and continuity in our business. Other than the vesting schedule, the terms of the CEO RSU are identical to other RSU awards granted to our executive officers.

Severance Plan. In November 2013, the LDICC adopted the Amyris, Inc. Executive Severance Plan (or the "Severance Plan"). The Severance Plan had an initial term of 36 months and thereafter will be automatically extended for successive additional one-year periods unless we provide six months' notice of non-renewal prior to the end of the applicable term. In May 2016, May 2017, February 2018 and February 2019, the LDICC reviewed the terms of the Severance Plan and elected to allow it to automatically renew upon the expiration of its initial term in November 2016 and renewal terms in November 2017 and November 2018, respectively. The LDICC

adopted the Severance Plan to provide a consistent and updated severance framework for our executive officers that aligns with peer practices. The terms of the Severance Plan, including the potential amounts payable under the Severance Plan and related defined terms, are described in detail below under "Potential Payments upon Termination and upon Termination Following a Change in Control." All of our named executive officers, and all senior level employees of Amyris that are eligible to participate in the Severance Plan (or, collectively, the "participants"), have entered into participation agreements to participate in the Severance Plan. Generally, the payments and benefits under the Severance Plan supersede and replace any rights the participants have in connection with any change of control or severance benefits contained in such participants' employment offer letters, equity award agreements or any other agreement that specifically relates to accelerated vesting of equity awards; provided, that (i) our CEO is entitled to the rights and benefits provided for in the CEO Performance Option in connection with a change of control of Amyris, as described above and (ii) in the event of any conflict between the terms of the CEO Performance Option and Mr. Melo's participation agreement or the Severance Plan relating to accelerated vesting of equity awards, the terms of the CEO Performance Option would govern and control. In addition, Mr. Alvarez's participation agreement provides that in the event that prior to full vesting of Mr. Alvarez's new hire equity awards (the "COO new hire awards"), Mr. Alvarez's employment with the Company terminates in circumstances entitling him to severance payments and benefits under the Severance Plan, whether or not in connection with a change of control, then upon such termination the vesting and exercisability of each COO new hire award will be automatically accelerated in full and the forfeiture provisions and/or company right of repurchase of each COO new hire award will automatically lapse accordingly.

We believe that the Severance Plan appropriately balances our need to offer a competitive level of severance protection to our executive officers and to induce them to remain in our employ through the potentially disruptive conditions that may exist around the time of a change of control, while not unduly rewarding executive officers for a termination of their employment.

Other Executive Benefits and Perquisites. We provide the following benefits to our executive officers on the same basis as other eligible employees:

- health insurance;
- time off and sick days;
- life insurance and supplemental life insurance;
- short-term and long-term disability; and
- a Section 401(k) plan with an employer matching contribution.

We believe that these benefits are generally consistent with those offered by other companies with which we compete for executive talent.

Some of the executive officers whom we have hired, including Messrs. Alvarez and Kieftenbeld, held positions in locations outside of Northern California at the time they agreed to join us. We have agreed in these instances to pay certain relocation and travel expenses to these executive officers, including housing and rental car expenses. The amounts of relocation and travel expenses paid to our named executive officers are included in the "All Other Compensation" column of the "Summary Compensation Table" above and the related footnotes. Given the high cost of living in the San Francisco Bay Area relative to most other metropolitan areas in the United States, we believe that for us not to be limited to hiring executives located near our headquarters in Emeryville, California, we must be willing to offer to pay an agreed upon amount of relocation costs.

Other Compensation Practices and Policies. The following additional compensation practices and policies apply to our executive officers in 2020:

Timing of Equity Awards. The timing of equity awards has been determined by our Board or the LDICC based on our Board's or the LDICC's view at the time regarding the adequacy of executive equity interests in us for purposes of retention and motivation.

In March 2018, November 2018, December 2019 and November 2020, our Board and the LDICC, respectively, ratified our existing policy regarding equity award grant dates, fixing grant dates in an effort to ensure the integrity of the equity award granting process. This policy took effect beginning with equity awards granted after the original adoption of the policy in March 2011. Under the policy, equity awards are generally granted on the following schedule:

- For equity awards to ongoing employees, the grant date is set as the first business day of the week following the week in which the award is approved; and
- For equity awards to new hires, the grant date is set as the first business day of the week following the later of the week in which the award is approved or the week in which the new hire commences his or her employment.

Tax Considerations. Generally, Section 162(m) of the U.S. Internal Revenue Code ("Section 162(m)") disallows a federal income tax deduction for public corporations of remuneration in excess of $1 million paid for any fiscal year to their chief executive officer and up to three other executive officers whose compensation is required to be disclosed to their stockholders under the Exchange Act because they are our most highly-compensated executive officers ("covered employees"). The exemption from Section 162(m)'s deduction limit for "performance-based compensation" has been repealed, effective for taxable years beginning after December 31, 2017, such that compensation paid to our covered employees in excess of $1 million will not be deductible unless it qualifies for transition relief applicable to certain arrangements in place as of November 2, 2017. While the LDICC has not adopted a formal policy regarding tax deductibility of the compensation paid to our executive officers, tax deductibility under Section 162(m) is a factor in its compensation deliberations. However, the 2010 EIP and 2020 EIP include various provisions designed to allow us to qualify stock options and other equity awards as "performance-based compensation" under Section 162(m), including a limitation on the maximum number of shares subject to awards that may be granted to an individual under the 2010 EIP or the 2020 EIP, as applicable, in any one year.

The LDICC seeks to balance the cost and benefit of tax deductibility with our executive compensation goals that are designed to promote long-term stockholder interest. Therefore, the LDICC may, in its discretion, authorize compensation payments that do not consider the deductibility limit imposed by Section 162(m) when it believes that such payments are appropriate to attract and retain executive talent and are in the best interests of the Company and our stockholders. Accordingly, we expect that a portion of our future cash compensation and equity awards to our executive officers will not be deductible under Section 162(m).

For example, with respect to the CEO Performance Option and CEO RSU described above, we expect that Mr. Melo will always be a covered employee for purposes of Section 162(m) of the Code. Thus, in any given year in which Mr. Melo exercises all or part of the CEO Performance Option, or vests and is settled in any portion of the CEO RSU, we may not be able to take a tax deduction for more than an aggregate of $1,000,000 attributable to Mr. Melo's compensation, including regarding compensation recognized by Mr. Melo from the exercise of the CEO Performance Option or settlement of the CEO RSU.

Compensation Recovery Policy. Other than with respect to the CEO Performance Option, as described above, we do not have a formal policy regarding adjustment or recovery of awards or payments if the relevant performance measures upon which they are based are restated or otherwise adjusted in a manner that would reduce the size of

the award or payment. Under those circumstances, our Board or the LDICC would evaluate whether adjustments or recoveries of awards or payments were appropriate based upon the facts and circumstances surrounding the restatement or other adjustment. We anticipate that our Board will adopt a policy regarding restatements in the future based on anticipated SEC and Nasdaq regulations requiring listed companies to have a policy that requires repayment of incentive compensation that was paid to current or former executive officers in the three fiscal years preceding any restatement due to material noncompliance with financial reporting requirements.

Stock Ownership Policy. We have not established stock ownership or similar guidelines with regard to our executive officers. All of our executive officers currently have a direct or indirect, through their stock option holdings, equity interest in our Company and we believe that they regard the potential returns from these interests as a significant element of their potential compensation for services to us.

Insider Trading Policy and Hedging/Pledging Prohibition. We have adopted an Insider Trading Policy that, among other things, prohibits our employees, officers and directors from trading in our securities while in possession of material, non-public information. In addition, under our Insider Trading Policy, our employees, officers and directors may not (1) acquire, sell or trade in any interest or position relating to the future price of our securities (such as a put option, a call option or a short sale) or (2) pledge our securities as collateral in a margin account or as collateral for a loan unless the pledge has been approved by the Compliance Officer.

Outstanding Equity Awards

The following table sets forth information regarding outstanding equity awards held by our named executive officers as of December 31, 2020.

	Option Awards				Stock Awards	
Name	Number of Securities Underlying Unexercised Options (#) Exercisable	Number of Securities Underlying Unexercised Options (#)[1] Unexercisable	Option Exercise Price ($/Sh)	Option Expiration Date	Number of Shares or Units of Stock That Have Not Vested (#)	Market Value of Shares or Units of Stock That Have Not Vested ($)[2]
John Melo	5,600	—	402.60	4/15/2021	—	—
	6,666	—	57.90	4/9/2022	—	—
	24,066	—	43.05	6/3/2023	—	—
	20,000	—	52.65	5/5/2024	—	—
	28,333	—	29.40	6/8/2025	—	—
	6,000	—	24.45	11/9/2025	—	—
	28,333	—	8.85	5/16/2026	—	—
	17,916	2,084[3][4]	3.16	6/12/2027	—	—
	—	3,250,000[5]	5.08	5/29/2028	350,000[6]	2,163,000
	3,417	744[4][7]	3.74	1/14/2029		
Han Kieftenbeld	—	22,500[8]	2.46	3/30/2030	67,500[9]	417,150
	—	50,000[10]	3.86	8/10/2030	150,000[11]	927,000
Eduardo Alvarez	30,000	—	2.89	10/23/2027	—	—
	—	50,000[10]	3.86	8/10/2030	150,000[11]	927,000

(1) In addition to the specific vesting schedule for each award, each unvested award is subject to the general terms of the 2010 EIP or 2020 EIP, as applicable, including the potential for future vesting acceleration of

vesting upon termination of employment in connection with a change of control, as further described below under "Potential Payments upon Termination and upon Termination Following a Change in Control."

(2) The market values of the RSU awards that have not vested are calculated by multiplying the number of shares underlying the RSU awards shown in the table by $6.18, the closing price of our ordinary shares on December 31, 2020.

(3) The unexercisable shares subject to this stock option award as of December 31, 2020 will vest monthly from January 1, 2021 to May 16, 2021.

(4) On May 11, 2017, Mr. Melo was granted an award of 1,220,000 RSUs and 780,000 stock options under the 2010 EIP, which inadvertently exceeded the Plan Limit. In June 2017, before the equity awards were issued to Mr. Melo, the LDICC rescinded and voided the entire award and granted grant new equity awards to Mr. Melo in compliance with the Plan Limit consisting of 20,000 stock options and 46,666 RSUs. In recognition of the value lost on the voiding of these awards, in January 2019 the Company paid a cash bonus of $185,320 to Mr. Melo and issued new equity awards to Mr. Melo consisting of 4,161 stock options and 38,616 RSUs.

(5) These stock options are subject to performance-based vesting conditions and to acceleration of vesting in connection with a change of control. For more information regarding these stock options, please see above under "Executive Compensation—Compensation Discussion and Analysis—2018 Compensation—Equity Awards—2018 CEO Equity Awards—CEO Performance Option."

(6) RSUs awarded on March 30, 2020 vest in equal annual installments over four years with the first installment vesting on July 1, 2019.

(7) The unexercisable shares subject to this stock option award as of December 31, 2020 will vest monthly from January 1, 2021 to May 1, 2022.

(8) The unexercisable shares subject to this stock option award as of December 31, 2020 will vest monthly from January 1, 2021 to March 16, 2023.

(9) RSUs awarded on March 30, 2020 vest in equal annual installments over two years with the first installment vesting on June 1, 2021.

(10) The unexercisable shares subject to this stock option award as of December 31, 2020 will vest monthly from January 1, 2021 to September 1, 2024.

(11) RSUs awarded on August 10, 2020 vest in equal annual installments over three years with the first installment vesting on September 1, 2021.

Pension Benefits

None of our named executive officers participates in, or has an account balance in, a qualified or non-qualified defined benefit plan sponsored by us.

Potential Payments upon Termination and upon Termination Following a Change in Control

In November 2013, the LDICC adopted the Amyris, Inc. Executive Severance Plan (the "Severance Plan"). The Severance Plan had an initial term of 36 months and thereafter will be automatically extended for successive additional one-year periods unless we provide six months' notice of non-renewal prior to the end of the applicable term. In May 2016, May 2017, February 2018, February 2019, and February 2020 the LDICC reviewed the terms of the Severance Plan and elected to allow it to automatically renew upon the expiration of its initial term in November 2016 and renewal terms in November 2017 and November 2018, respectively. The LDICC adopted the Severance Plan to provide a consistent and updated severance framework for our executive officers that aligns with peer practices. All of our named executive officers, and all senior level employees of Amyris that are eligible to participate in the Severance Plan (or, collectively, the "participants"), have entered into participation agreements to participate in the Severance Plan. Generally, the payments and benefits under the Severance Plan supersede and replace any rights the participants have in connection with any change of control or severance benefits

contained in such participants' employment offer letters, equity award agreements or any other agreement that specifically relates to accelerated vesting of equity awards; provided, that (i) our CEO is entitled to the rights and benefits provided for in the CEO Performance Option in connection with a change of control of Amyris, as described above and (ii) in the event of any conflict between the terms of the CEO Performance Option and Mr. Melo's participation agreement or the Severance Plan relating to accelerated vesting of equity awards, the terms of the CEO Performance Option would govern and control.

Upon the execution of a participation agreement, the participants are eligible for the following payments and benefits under the Severance Plan.

Upon termination by us of a participant's employment other than for "cause" (as defined below) or the death or disability of the participant, or upon resignation by the participant of such participant's employment for "good reason" (as defined below) (collectively referred to as an "Involuntary Termination"), the participant becomes eligible for the following severance benefits:

- 12 months of base salary continuation (18 months for our CEO)
- 12 months of health benefits continuation (18 months for our CEO)

Upon an Involuntary Termination of a participant at any time within the period beginning three months before and ending 12 months after a change of control (as defined below) of the Company, the participant becomes eligible for the following severance payments and benefits:

- 18 months of base salary continuation (24 months for our CEO)
- 18 months of health benefits continuation (including for our CEO)
- Automatic acceleration of vesting and exercisability of all outstanding equity awards then held by the participant

In addition, as noted in the table below, Mr. Alvarez's participation agreement provides that in the event he undergoes an Involuntary Termination (whether or not in connection with a change of control), the vesting and exercisability of certain of his equity awards will accelerate.

In each case, the payments and benefits are contingent upon the participant complying with various requirements, including non-solicitation and confidentiality obligations to us, and on execution, delivery and non-revocation by the participant of a standard release of claims in favor of the Company within 60 days of the participant's separation from service (as defined in Section 409A of the Code). The payments and benefits are subject to forfeiture if, among other things, the participant breaches any of his or her obligations under the Severance Plan and related agreements. The payments and benefits are also subject to adjustment and deferral based on applicable tax rules relating to change-in-control payments and deferred compensation.

Under the Severance Plan, "cause" generally encompasses the participant's: (i) gross negligence or intentional misconduct; (ii) failure or inability to satisfactorily perform any assigned duties; (iii) commission of any act of fraud or misappropriation of property or material dishonesty; (iv) conviction of a felony or a crime involving moral turpitude; (v) unauthorized use or disclosure of the confidential information or trade secrets of Amyris or any of our affiliates that use causes material harm to Amyris; (vi) material breach of contractual obligations or policies; (vii) failure to cooperate in good faith with investigations; or (viii) failure to comply with confidentiality or intellectual property agreements. Prior to any determination that "cause" under the Severance Plan has occurred, we are generally required to provide notice to the participant specifying the event or actions giving rise to such determination and a 10-day cure period (30 days in the case of failure or inability to satisfactorily perform any assigned duties).

Under the Severance Plan, "good reason" generally means: (i) a material reduction of the participant's role at Amyris; (ii) certain reductions of base salary; (iii) a workplace relocation of more than 50 miles; or (iv) our failure to obtain the assumption of the Severance Plan by a successor. In order for a participant to assert good reason for his or her resignation, he or she must provide us written notice within 90 days of the occurrence of the condition and allow us 30 days to cure the condition. Additionally, if we fail to cure the condition within the cure period, the participant must terminate employment with us within 30 days of the end of the cure period.

Under the Severance Plan, a "change of control" will generally be deemed to occur if (i) Amyris completes a merger or consolidation after which Amyris's stockholders before the merger or consolidation do not own at least a majority of the outstanding voting securities of the acquiring or surviving entity after such merger or consolidation, (ii) Amyris sells all or substantially all of its assets, (iii) any person or entity acquires more than 50% of Amyris's outstanding voting securities or (iv) a majority of Amyris's directors cease to be directors over any one-year period.

To the extent any severance benefits to a named executive officer constitute deferred compensation subject to Section 409A of the Code and such officer is deemed a "specified employee" under Section 409A, we will defer payment of such benefits to the extent necessary to avoid adverse tax treatment.

Agreements with Executive Officers

We do not have formal employment agreements with any of our named executive officers. The initial compensation of each named executive officer was set forth in an employment offer or promotion letter that we executed with such executive officer at the time his or her employment with us commenced (or at the time of her or his promotion, as the case may be). Each employment offer letter provides that the named executive officer's employment is "at will."

As a condition to their employment, our named executive officers entered into non-competition, non-solicitation and proprietary information and inventions assignment agreements. Under these agreements, each named executive officer has agreed (i) not to solicit our employees during her or his employment and for a period of 12 months after the termination of his or her employment, (ii) not to compete with us or assist any other person to compete with us during her or his employment, and (iii) to protect our confidential and proprietary information and to assign to us intellectual property developed during the course of his or her employment.

See above under "Executive Compensation—Potential Payments upon Termination and upon Termination Following a Change in Control" for a description of potential payments to our named executive officers upon termination of employment, including in connection with a change of control of the Company.

Limitation of Liability and Indemnification

Our Certificate of Incorporation limits the personal liability of directors for breach of fiduciary duty to the maximum extent permitted by the Delaware General Corporation Law ("DGCL"), and provides that no director will have personal liability to us or to our stockholders for monetary damages for breach of fiduciary duty or other duty as a director. However, these provisions do not eliminate or limit the liability of any of our directors for:

- any breach of the director's duty of loyalty to us or our stockholders;
- acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law;
- voting or assenting to unlawful payments of dividends, stock repurchases or other distributions; or
- any transaction from which the director derived an improper personal benefit.

Any amendment to or repeal of these provisions will not eliminate or reduce the effect of these provisions in respect of any act, omission or claim that occurred or arose prior to such amendment or repeal. If the DGCL is

amended to provide for further limitations on the personal liability of directors of corporations, then the personal liability of our directors will be further limited to the greatest extent permitted by the DGCL.

In addition, our Bylaws provide that we must indemnify our directors and officers to the fullest extent permitted by the DGCL, and we must advance expenses, including attorneys' fees, to our directors and officers, in connection with legal proceedings related to their status or service, subject to very limited exceptions.

We maintain an insurance policy that covers certain liabilities of our directors and officers arising out of claims based on acts or omissions in their capacities as directors or officers.

Certain of our non-employee directors may, through their relationships with their employers, be insured and/or indemnified against certain liabilities incurred in their capacity as members of the Board.

We have entered into indemnification agreements with each of our directors and executive officers that may be broader than the specific indemnification provisions contained in the DGCL. These indemnification agreements require us, among other things, to indemnify our directors and executive officers against liabilities that may arise by reason of their status or service. These indemnification agreements also require us to advance all expenses incurred by the directors and executive officers in investigating or defending against any such action, suit or proceeding. We believe that these agreements are necessary to attract and retain qualified individuals to serve as directors and executive officers.

We are not presently aware of any pending litigation or proceeding involving any person who is or was one of our directors, officers, employees or other agents or is or was serving at our request as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, for which indemnification is sought, and we are not aware of any threatened litigation that may result in claims for indemnification.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers or persons controlling our Company pursuant to the foregoing provisions, policies and agreements, we have been informed that, in the opinion of the SEC, such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable.

Mr. Melo did not receive any compensation in connection with his service as a director due to his status as an employee of the Company. The compensation that we pay to Mr. Melo is discussed in the "Executive Compensation" section of this Proxy Statement.

Director Compensation

Director Compensation for 2020

During the fiscal year ended December 31, 2020, our non-employee directors who served during 2020 earned the compensation set forth below.

Name	Fees Earned or Paid in Cash ($)[1]	Stock Awards ($)[2][8]	Option Awards($)[2][8]	All Other Director Compensation ($)	Total ($)
John Doerr	49,000	11,194	12,908	—	73,102
Geoffrey Duyk	47,500	47,256	12,908	—	107,664
Philip Eykerman[3]	40,000	11,194	12,908	—	64,102
Christoph Goppelsroeder[4]	40,000	—	—	—	40,000
Frank Kung[5]	40,000	11,194	12,908	—	64,102
James McCann	41,937	11,194	12,908	—	66,039
Steven Mills	69,375	11,194	12,908	—	93,477
Carole Piwnica	54,500	11,194	12,908	—	78,602
Lisa Qi[6]	40,000	—	—	—	40,000
Julie Washington[7]	18,173	8,747	10,090	—	37,010
Patrick Yang	45,000	11,194	12,908	—	69,102

(1) Reflects Board, Committee Chairman and Committee member retainer fees earned during 2020.

(2) The amounts in the "Stock Awards" and "Option Awards" columns reflect the aggregate grant date fair value of such awards computed in accordance with FASB ASC Topic 718. The assumptions made in the valuation of the awards are discussed in Note 12, "Stock-based Compensation" of "Notes to Consolidated Financial Statements" in our Annual Report on Form 10-K for the fiscal year ended December 31, 2020. These amounts do not correspond to the actual value that may be recognized by our non-employee directors. In August 2020, each of our non-employee directors other than Mr. Goppelsroeder and Ms. Qi received an annual award under the 2020 EIP of an option to purchase 3,466 shares of our common stock and 2,266 RSUs, and Dr. Duyk received an award under the 2020 EIP of an additional 7,300 RSUs for his service as interim Board Chairman.

(3) All cash compensation earned by Mr. Eykerman during 2020 was to be paid directly to DSM, which designated Mr. Eykerman to serve on our Board, and he did not receive any cash benefit from such payments.

(4) Mr. Goppelsroeder resigned from the Board as of April 1, 2021. All cash compensation earned by him during 2020 was to be paid directly to DSM, which designated Mr. Goppelsroeder to serve on our Board, and he did not receive any cash benefit from such payments. In addition, Mr. Goppelsroeder has to date declined each equity award granted to him pursuant to our non-employee director compensation program, without prejudice to future awards.

(5) All cash compensation earned by Dr. Kung during 2020 was to be paid directly to Vivo, which designated Dr. Kung to serve on our Board, and Dr. Kung did not receive any cash benefit from such payments. Pursuant to an agreement between Dr. Kung and Vivo, Dr. Kung has agreed, subject to certain conditions and exceptions, to remit the equity compensation he receives under our non-employee director compensation program to Vivo if and when such equity compensation becomes vested and/or exercised.

(6) Ms. Qi has declined receiving any equity award pursuant to our non-employee director compensation program.

(7) Ms. Washington was appointed to our Board in August 2020 and the fees earned by her in 2020 represent retainer fees earned for the portions of 2020 that she served on our Board. Upon joining our Board in August 2020, Ms. Washington received an initial award under the 2021 EIP of an option to purchase 3,466 shares of our common stock and 2,266 RSUs. This award was contemplated by our non-employee director compensation program (described in "Narrative Disclosure to Director Compensation Tables" below). The stock option and RSU awards will vest in full on August 5, 2021. The grant date fair value for these awards, as calculated under FASB ASC Topic 718, is as follows:

Name	Date of Grant	Number of Shares of Stock or Units (#)	Number of Securities Underlying Options (#)	Exercise Price Per Share ($)	Stock Awards ($)[2]	Option Awards ($)[2]
Julie Washington	8/10/2020	—	3,466	3.86	—	10,090
Julie Washington	8/10/2020	2,266	—	—	8,747	—

(8) As of December 31, 2020, the non-employee directors who served during 2020 held the following outstanding equity awards:

Name	Outstanding Options (Shares)	Outstanding Stock Awards (Units)
John Doerr	17,197	2,266
Geoffrey Duyk	11,598	9,566
Philip Eykerman	15,131	2,266
Christoph Goppelsroeder	—	—
Frank Kung	13,398	2,266
James McCann	7,682	2,266
Steven Mills	10,398	2,266
Carole Piwnica	17,197	2,266
Lisa Qi	—	—
Julie Washington	3,466	2,266
Patrick Yang	15,997	2,266

Narrative Disclosure to Director Compensation Tables

Under our current non-employee director compensation program, in each case subject to final approval by our Board with respect to equity awards:

- Each non-employee director receives an annual cash retainer of $40,000 and an annual equity award consisting of an option to purchase 3,466 shares of our common stock and 2,266 RSUs, vesting in full after one year (in each case subject to continued service through the applicable vesting date). Any new Board members will receive a pro-rated annual equity award upon joining our Board, which award will vest in full on the one-year anniversary of the grant of the most recent annual Board equity awards.
- The non-executive Board Chairman, if any, receives an additional annual award of 7,300 RSUs. The award becomes fully vested after one year (subject to continued service through the applicable vesting date).
- The Chairman of the Audit Committee receives an additional annual cash retainer of $30,000.
- The Chairman of the LDICC receives an additional annual cash retainer of $10,000.

- The Chairman of the NGC receives an additional annual cash retainer of $9,000.
- Audit Committee, LDICC and NGC members other than the Chairman receive an additional annual cash retainer of $7,500, $5,000 and $4,500, respectively.

In general, all of the retainers described above are paid quarterly in arrears. In cases where a non-employee director serves for part of the year in a capacity entitling him or her to a retainer payment, the retainer is prorated to reflect his or her period of service in that capacity. Non-employee directors are also eligible for reimbursement of their expenses incurred in attending Board and Committee meetings.

Transactions with Related Persons

Certain Transactions

The following is a description of each transaction since the beginning of 2019, and each currently proposed transaction, in which:

- we have been or are to be a participant;
- the amount involved exceeds the lesser of $120,000 or 1% of the average of our total assets for the last two completed fiscal years; and
- any of our directors, executive officers or holders of more than 5% of any class of our capital stock at the time of the transactions in issue, or any immediate family member of or person sharing the household with any of these individuals, had or will have a direct or indirect material interest.

Transactions with Foris

Loan and Security Agreement

On April 15, 2019, the Company, GACP Finance Co., LLC ("GACP") and Foris, an entity affiliated with director John Doerr of Kleiner Perkins Caufield & Byers, a current stockholder, and an owner of greater than five percent of our outstanding common stock, entered into a Loan Purchase Agreement, pursuant to which Foris agreed to purchase and assume from GACP, and GACP agreed to sell and assign to Foris, the outstanding loans under the Loan and Security Agreement, dated June 29, 2018, as amended (the "LSA"), among the Company, certain subsidiaries of the Company and GACP, and all documents and assets related thereto. In connection with such purchase and assignment, the Company agreed to repay Foris $2.5 million of the purchase price paid by Foris to GACP (the "Company LPA Obligation"). The closing of the loan purchase and assignment occurred on April 16, 2019.

On August 14, 2019, the Company and Foris entered into an Amendment No. 5 and Waiver to the LSA (the "LSA Amendment and Waiver"), pursuant to which (i) the maturity date of the loans under the LSA was extended from July 1, 2021 to July 1, 2022, (ii) the interest rate for the loans under the LSA was modified from the sum of (A) the greater of (x) the prime rate as reported in the Wall Street Journal or (y) 4.75% plus (B) 9% to the greater of (A) 12% or (B) the rate of interest payable with respect to any indebtedness of the Company, (iii) the amortization of the loans under the LSA was delayed until December 16, 2019, (iv) certain accrued and future interest and agency fee payments under the LSA were delayed until December 16, 2019, (v) certain covenants under the LSA, including related definitions, were amended to provide the Company with greater operational and financial flexibility, including, without limitation, to permit the incurrence of the indebtedness under the Naxyris Loan Facility (as described below) and the granting of liens with respect thereto, subject to the terms of an intercreditor agreement between Foris and Naxyris governing the respective rights of the parties with respect to, among other things, the assets securing the Naxyris Loan Agreement and the LSA (the "Intercreditor Agreement"), (vi) certain outstanding unsecured promissory notes issued by the Company to Foris on April 8, 2019, June 11, 2019, July 10, 2019 and July 26, 2019 (as described below under "Foris Credit Agreements"), in an aggregate principal amount of $32.5 million, as well as the Company LPA Obligation, were added to the loans under the LSA, made subject to the LSA and secured by the security interest in the collateral granted to Foris under the LSA, and such promissory notes and contractual obligation were cancelled in connection therewith, and (vii) Foris agreed to waive certain existing defaults under the LSA, including with respect to covenants related to quarterly minimum revenues, minimum liquidity amounts and a minimum asset coverage ratio. After giving effect to the LSA Amendment and Waiver, there is $71.0 million aggregate principal amount of loans outstanding under the LSA. In connection with the entry into the LSA Amendment and Waiver, on August 14, 2019 the Company issued to Foris a warrant to

purchase up to 1,438,829 shares of common stock at an exercise price of $2.87 per share, with an exercise term of two years from issuance. Pursuant to the terms of the warrant, Foris may not exercise the warrant to the extent that, after giving effect to such exercise, Foris, together with its affiliates, would beneficially own in excess of 19.99% of the number of shares of common stock outstanding after giving effect to such exercise, unless the Company has obtained stockholder approval to exceed such limit in accordance with Nasdaq rules and regulations, which the Company obtained at the 2019 annual meeting of stockholders.

On October 10, 2019, the Company and Foris entered into Amendment No. 6 to the LSA, pursuant to which the maximum loan commitment of Foris under the LSA was increased by $10.0 million. On October 11, 2019, the Company borrowed an additional $10.0 million from Foris under the LSA (the "October 2019 LSA Loan"), which is subject to the terms and provisions of the LSA, including the lien on substantially all the assets of the Company. After giving effect to the October 2019 LSA Loan, there was $81.0 million aggregate principal amount of loans outstanding under the LSA. Also, in connection with the October 2019 LSA Amendment, the Company issued a warrant to purchase up to 2.0 million shares of common stock at an exercise price of $2.87 per share, with an exercise term of two years from issuance.

On October 28, 2019, the Company and Foris entered into an amended and restated LSA (the "A&R LSA"), pursuant to which, among other things, certain covenants and related definitions were amended to permit the incurrence of the indebtedness under the October 2019 Naxyris Loan (as defined below), subject to the terms of an amended and restated intercreditor agreement, dated October 28, 2019, between Foris and Naxyris governing the respective rights of the parties with respect to, among other things, the assets securing the A&R Naxyris LSA (as defined below) and the A&R LSA, and additional covenants were added relating to, among other things, maintenance of intellectual property, compliance with laws, delivery of reports and repayment of indebtedness.

On November 27, 2019, the Company borrowed an additional $10.0 million from Foris under the A&R LSA dated October 28, 2019 (the "October 2019 A&R LSA Loan"). The new loan has identical terms to the previous loans under the LSA except that the maturity date is March 31, 2023 (as opposed to July 1, 2022 for the other loans under the LSA). In connection with the new loan, the Company issued a warrant to purchase up to 1,000,000 shares of common stock at an exercise price of $3.87 per share, exercisable for a period of two years from issuance. After giving effect to the October 2019 A&R LSA Loan, there was $91.0 million aggregate principal amount of loans outstanding under the A&R LSA.

On March 11, 2020, the Company and Foris signed a letter agreement amendment with respect to the Letter Agreement referred to in the A&R LSA with the purpose of updating the definitions of certain financial covenants (minimum liquidity and borrowing base) under the A&R LSA.

On June 1, 2020, the Company and Foris entered into Amendment No. 1 to the A&R LSA (the "2020 LSA Amendment"), pursuant to which: (i) Foris shall have the option, in its sole discretion, to convert all or a portion of the secured indebtedness under the A&R LSA (approximately $50.5 million outstanding in principal) into shares of our common stock at a conversion price equal to the Purchase Price (as defined in the private placement described below) (the "Conversion Option"), subject to (1) required approvals by Nasdaq, and (2) our stockholder approval (the "Additional Stockholder Approval") to (x) increase the authorized capital stock of Amyris, if applicable, and (y) issue shares of our common stock upon exercise of the Conversion Option in accordance with applicable rules and regulations of Nasdaq, including Nasdaq Listing Standard Rule 5635(d), which approval was obtained at the special meeting of our stockholders on August 14, 2020; (ii) the interest rate applicable to the secured indebtedness was amended from and after June 1, 2020 to a per annum rate of interest equal to 6.00%; and (iii) the Company shall not be required to make any interest payments outstanding as of May 31, 2020 or accruing thereafter prior to July 1, 2022, the maturity date of the loan under the A&R LSA.

Foris Credit Agreements

On April 8, 2019, the Company and Foris entered into a credit agreement to make available to the Company an unsecured credit facility in an aggregate principal amount of $8.0 million (the "April Foris Credit Agreement"), which the Company borrowed in full on April 8, 2019 and issued to Foris a promissory note in the principal amount of $8.0 million (the "April Foris Note"). The April Foris Note has a maturity date of October 14, 2019. In connection with the entry into the April Foris Credit Agreement and the issuance of the April Foris Note, which has no stated interest rate, the Company agreed to pay Foris a fee of $1.0 million, payable on or prior to the maturity date of the April Foris Note (the "April Foris Note Fee"); provided, that the April Foris Note Fee would be reduced to $0.5 million if the Company repaid the April Foris Note in full by July 15, 2019.

On June 11, 2019, the Company and Foris entered into a credit agreement to make available to the Company an unsecured credit facility in an aggregate principal amount of $8.5 million, which the Company borrowed in full on June 11, 2019 and issued to Foris a promissory note in the principal amount of $8.5 million (the "June Foris Note"). The June Foris Note (i) accrues interest at a rate of 12.5% per annum from and including June 11, 2019, which interest is payable on the maturity date or the earlier repayment or other satisfaction of the June Foris Note, and (ii) matures on August 28, 2019; provided, that if certain warrants held by DSM are exercised, then the maturity date of the June Foris Note will be the business day immediately following such exercise.

On July 10, 2019, the Company and Foris entered into a credit agreement to make available to the Company an unsecured credit facility in an aggregate principal amount of $16.0 million (the "July Foris Credit Agreement"), of which the Company borrowed $8.0 million on July 10, 2019 and $8.0 million on July 26, 2019 and issued to Foris promissory notes, each in the principal amount of $8.0 million, on such dates (the "July Foris Notes"). The July Foris Notes (i) accrue interest at a rate of 12.5% per annum from and including the respective date of issuance, which interest is payable on the maturity date or the earlier repayment or other satisfaction of the applicable July Foris Note, and (ii) mature on December 31, 2019. In connection with the entry into the July Foris Credit Agreement, the Company and Foris amended the New Warrant issued to Foris on August 17, 2018 (see above under "August 2018 Warrant Transaction") to reduce the exercise price of such warrant from $7.52 per share to $2.87 per share.

The Company may at its option repay the amounts outstanding under the April Foris Note (including the April Foris Note Fee), the June Foris Note and the July Foris Notes before their respective maturity dates, in whole or in part, at a price equal to 100% of the amount being repaid plus, in the case of the June Foris Note and the July Foris Notes, accrued and unpaid interest on such amount to the date of repayment.

On August 14, 2019, the April Foris Note, the June Foris Note and the July Foris Notes were added to the loans under the LSA, made subject to the LSA and secured by the security interest in the collateral granted to Foris under the LSA, and such notes were cancelled in connection therewith. See above under "Loan and Security Agreement" for additional information.

On August 28, 2019, the Company and Foris entered into a credit agreement to make available to the Company an unsecured credit facility in an aggregate principal amount of $19.0 million (the "August Foris Credit Agreement"), which the Company borrowed in full on August 28, 2019 and issued to Foris a promissory note in the principal amount of $19.0 million (the "August Foris Note"). The August Foris Note (i) accrues interest at a rate of 12% per annum from and including August 28, 2019, which interest is payable quarterly in arrears on each March 31, June 30, September 30 and December 31, beginning December 31, 2019, and (ii) matures on January 1, 2023. The Company may, at its option, repay the amounts outstanding under the August Foris Note before the maturity date, in whole or in part, at a price equal to 100% of the amount being repaid plus accrued and unpaid interest on such amount to the date of repayment.

In connection with the entry into the August Foris Credit Agreement, on August 14, 2019 the Company issued to Foris a warrant to purchase up to 4,871,795 shares of common stock at an exercise price of $3.90 per share, with an exercise term of two years from issuance in a private placement pursuant to the exemption from registration under Section 4(a)(2) of the Securities Act and Regulation D promulgated under the Securities Act. The exercise price of the warrant is subject to standard adjustments but does not contain any anti-dilution protection, and the warrants only permit "cashless" or "net" exercise after the six-month anniversary of issuance of the applicable warrant, and only to the extent that there is not an effective registration statement covering the resale of the shares of common stock underlying the applicable warrant. In addition, Foris may not exercise the warrant to the extent that, after giving effect to such exercise, Foris, together with its affiliates, would beneficially own in excess of 19.99% of the number of shares of common stock outstanding after giving effect to such exercise, unless the Company has obtained stockholder approval to exceed such limit in accordance with Nasdaq rules and regulations, which the Company obtained at the 2019 annual meeting of stockholders.

On April 29, 2020, the Company and Foris entered into a Credit Agreement to make available to the Company an unsecured loan in the principal amount of $5 million (the "2020 Loan"), which the Company borrowed in full on April 29, 2020. The 2020 Loan matures on December 31, 2022 (the "Foris Loan Maturity Date") and accrues interest at a rate of 12% per annum from and including the 2020 Loan date through the Foris Loan Maturity Date.

2019 Private Placements

On April 16, 2019, the Company sold and issued to Foris 6,732,369 shares of common stock at a price of $2.87 per share, as well as a warrant to purchase up to 5,424,804 shares of common stock at an exercise price of $2.87 per share, with an exercise term of two years from issuance, in a private placement pursuant to the exemption from registration under Section 4(a)(2) of the Securities Act and Regulation D promulgated under the Securities Act, for aggregate cash proceeds to the Company of $20.0 million.

On April 26, 2019, the Company sold and issued to Foris 2,832,440 shares of common stock at a price of $5.12 per share, as well as a warrant to purchase up to 3,983,230 shares of common stock at an exercise price of $5.12 per share, with an exercise term of two years from issuance, in a private placement pursuant to the exemption from registration under Section 4(a)(2) of the Securities Act and Regulation D promulgated under the Securities Act, for aggregate cash proceeds to the Company of $15.0 million. On August 28, 2019, in connection with the entry into the August Foris Credit Agreement (as described above under "Foris Credit Agreements"), the Company and Foris amended the warrant issued to Foris on April 26, 2019 to reduce the exercise price of such warrant from $5.12 per share to $3.90 per share.

The exercise price of the warrants issued in the foregoing private placements is subject to standard adjustments but does not contain any anti-dilution protection, and the warrants only permit "cashless" or "net" exercise after the six-month anniversary of issuance of the applicable warrant, and only to the extent that there is not an effective registration statement covering the resale of the shares of common stock underlying the applicable warrant. In addition, in connection with the foregoing private placements, the Company agreed not to effect any exercise or conversion of any Company security, and Foris agreed not to exercise or convert any portion of any Company security, to the extent that after giving effect to such exercise or conversion, Foris, together with its affiliates, would beneficially own in excess of 19.99% of the number of shares of common stock outstanding immediately after giving effect to such exercise or conversion, and the warrants contained a similar limitation. The Company obtained stockholder approval for Foris to exceed such limitation in accordance with Nasdaq rules and regulations at the 2019 annual meeting of stockholders.

Convertible Note Exchange

On May 14, 2019, the Company exchanged $5.0 million aggregate principal amount of its 6.50% Convertible Senior Notes due 2019 held by Foris, including accrued and unpaid interest thereon up to, but excluding, May 15,

2019, for 1,122,460 shares of common stock and a warrant to purchase up to 352,638 shares of common stock at an exercise price of $4.56 per share, with an exercise term of two years from issuance, in a private exchange pursuant to the exemption from registration under Section 3(a)(9) of the Securities Act. On August 28, 2019, in connection with the entry into the August Foris Credit Agreement (as described above under the heading *Foris Credit Agreements*), the Company and Foris amended the warrant issued to Foris on May 14, 2019 to reduce the exercise price of such warrant from $4.56 per share to $3.90 per share. The exercise price of the warrant issued in the foregoing exchange is subject to standard adjustments but does not contain any anti-dilution protection, and the warrant only permits "cashless" or "net" exercise after the six-month anniversary of the exercisability of such warrant, and only to the extent that there is not an effective registration statement covering the resale of the shares of common stock underlying such warrant. In addition, the exercisability of such warrant is subject to stockholder approval in accordance with Nasdaq rules and regulations, which the Company obtained at the 2019 annual meeting of stockholders.

Series B Preferred Stock Agreement

On October 23, 2019, Amyris and Foris signed an agreement (the "Preferred Stock Agreement") to amend the Certificate of Designation of Preferences, Rights and Limitations relating to the Series B Preferred Stock (the "Certificate of Amendment") relating to its Series B 17.38% Convertible Preferred Stock, to remove the existing beneficial ownership limitation with respect to conversion of the Series B Preferred Stock of 4.99% of Amyris's outstanding common stock (which could be increased by the holders of the Series B Preferred Stock to 9.99% upon at least 61 days' notice) (the "Beneficial Ownership Limit"). As of the date of the Preferred Stock Agreement, the sole holder of the Series B Preferred Stock was Foris, which held 6,376.2787 shares of Series B Preferred Stock (convertible into 1,012,071 shares of common stock), the automatic conversion of which was being held in abeyance since October 2017 due to Foris's beneficial ownership of Amyris common stock. On October 23, 2019, the Board approved the Certificate of Amendment, which was filed with the Delaware Secretary of State, subsequently effecting the conversion of the shares of Series B Preferred Stock held by Foris into common stock.

Warrants Exercises for Cash

On January 13, 2020, Foris delivered to the Company an irrevocable notice of cash exercise with respect to a warrant to purchase 4,877,386 shares of the Company's common stock, issued by the Company on August 17, 2018 and, as a result, the Company received approximately $14.0 million from Foris representing an issuance of 4,877,386 shares of common stock at an exercise price of $2.87 per share.

On March 11, 2020, Foris provided to the Company a notice of cash exercise to purchase 5,226,481 shares of the Company's common stock at an exercise price of $2.87 per share, pursuant to the PIPE Rights (as defined below) issued by the Company on January 31, 2020. On March 12, 2020, the Company received approximately $15.0 million from Foris in connection with the PIPE Rights exercise and Foris received the PIPE shares after the Company obtained shareholder approval to increase its authorized capital stock, on May 29, 2020.

On December 11, 2020, Foris provided to the Company a notice of cash exercise to purchase 5,000,000 shares of the Company's common stock at an exercise price of $2.87 per share, pursuant to the Foris Rights (as defined below) issued by the Company on January 31, 2020 and, in connection therewith the Company received approximately $14.4 million from Foris representing 5,000,000 shares of common stock at an exercise price of $2.87 per share.

Warrant Amendments and Exercises

On January 31, 2020, the Company entered into separate warrant amendment agreements (the "Warrant Amendments") with Foris and with certain other holders (the "Holders") of the Company's outstanding warrants

to purchase shares of the Company's common stock, pursuant to which the exercise price of certain warrants (the "Amended Warrants") held by the Holders and Foris was reduced to $2.87 per share upon the exercise of the Amended Warrant.

On January 31, 2020, the Company and Foris entered into a warrant exercise agreement (the "Exercise Agreement") pursuant to which (i) Foris agreed (A) to exercise all of its outstanding common stock purchase warrants, currently exercisable for an aggregate of 19,287,780 shares of Common Stock (the "Foris Warrant Shares"), at a weighted average exercise price of approximately $2.84 per share (following the Warrant Amendments) and with an aggregate exercise price of $54.8 million (the Exercise Price), and (B) to purchase 5,279,171 shares of Common Stock (the "Foris Shares"), at $2.87 per share for a total purchase price of $15.2 million ("Purchase Price"), (ii) Foris agreed to pay the Exercise Price and the Purchase Price through the cancellation of $70 million owed by the Company to Foris under the Foris $19 Million Note and the Foris LSA and (iii) the Company agreed to issue to Foris the Foris Shares and an additional right to purchase 8,778,230 shares of Common Stock at a purchase price of $2.87 per share, for a period of 12 months from the Exercise Agreement (the "Foris Rights"). The resale of the Foris Warrant Shares was registered pursuant to the Company's Registration Statement. On December 11, 2020, the Company and Foris amended the Foris Rights to extend its termination date to July 31, 2021.

2020 Private Placements

On January 31, 2020, the Company entered into separate Security Purchase Agreements ("Purchase Agreements") with certain accredited investors, including Foris, for the issuance and sale of an aggregate of 8,710,802 shares of Common Stock (the "PIPE Shares") and rights to purchase an aggregate of 8,710,802 shares of Common Stock at a purchase price of $2.87 per share, for a period of 12 months from the Closing (as defined below) (the "PIPE Rights"), for an aggregate purchase price of $25 million (the "Offering"). The closing of the Offering (the "Closing") occurred on February 4, 2020. At the Closing, the Company received aggregate cash proceeds of $25 million upon issuance of the PIPE Shares and the PIPE Rights. The Purchase Agreements include customary representations, warranties and covenants of the parties.

On June 1 and June 4, 2020, the Company entered into separate security purchase agreements with Foris and Perrara Ventures, LLC, an entity affiliated with director John Doerr of Kleiner Perkins Caufield & Byers, a current stockholder, and an owner of greater than five percent of our outstanding common stock, for the private placement of 30,000 shares of our Series E Convertible Preferred Stock, par value $0.0001 per share, convertible into 9,999,999 shares of our common stock (the "Preferred Stock"), at a price of $1,000 per Preferred Share, resulting in an aggregate purchase price of $30 million. The Preferred Stock was automatically converted into shares of our common stock on August 17, 2020.

Transactions with DSM

Value Sharing Agreement Amendments, Assignment and related Agreements

On April 16, 2019, the Company assigned to DSM Nutritional Products Europe Ltd all of its rights and obligations under the Value Sharing Agreement, dated December 28, 2017, between the Company and DSM Nutritional Products AG (together with its affiliates, "DSM"), our commercial partner and affiliate of an owner of greater than five percent of our outstanding common stock, which has the right to designate up to two members of our Board of Directors, for an aggregate consideration of $57.0 million, $29.1 million of which was paid to the Company in cash, with the remaining $27.9 million being used to pay certain existing obligations of the Company to DSM, including certain obligations under the Supply Agreement Amendment (as described below). In connection therewith, on April 16, 2019, the Company and DSM entered into amendments to the Supply Agreement, dated December 28, 2017 (the "Supply Agreement"), and the Performance Agreement dated November 17, 2017, as well as the Quota Purchase Agreement dated November 17, 2017 (the "QPA"), relating to the December 2017

sale of Amyris Brasil to DSM, pursuant to which (i) DSM agreed to reduce certain manufacturing costs and fees to be paid by the Company related to the production of farnesene under the Supply Agreement through 2021, as well as remove the priority of certain customers over the Company with respect to production capacity at the Brotas Facility, (ii) the Company agreed to provide DSM rights to conduct certain process and downstream recovery improvements under the Performance Agreement at facilities other than the Brotas Facility in exchange for DSM providing the Company with a license to such improvements and (iii) the Company released DSM from its obligation to provide manufacturing and support services under the QPA in connection with the Company's planned new manufacturing facility, which is no longer planned to be located at the Brotas, Brazil location. On September 30, 2019, the Company and DSM further amended the Supply Agreement with regard to payment obligations, including to reduce the deadline for the Company to pay undisputed invoice amounts and to grant DSM the option to suspend its obligations under the Supply Agreement upon certain payment defaults by the Company.

On February 24, March 30, and May 22, 2020, the Company and DSM entered into the amendments of the QPA with respect to the offsetting of tax credit benefits and pursuant to which DSM agreed to pay the Company R$5.4 million (approximately US$1.1 million), R$2.8 million (approximately US$0.6 million), and R$6.8 million (approximately US$1.4 million), respectively and cumulatively, as advances of future payments that may become payable under the QPA, which amounts can be used to offset other amounts that would be otherwise payable by the Company to DSM.

On July 21, 2020, the Company and DSM negotiated a Second Amendment to the Transition Services Agreement, pursuant to which the information technology ("IT") services provided by the Company to DSM would be extended through July 31, 2020 and the Company would pay for certain IT services necessary to that certain campaign of the Company after July 31, 2020 and through the duration of such campaign, which services could amount to approximately R$1.5 million in a 12-month period.

Credit Agreement

On September 17, 2019, the Company and DSM entered into a credit agreement (the "2019 DSM Credit Agreement") to make available to the Company a secured credit facility in an aggregate principal amount of $8.0 million, to be issued in separate installments of $3.0 million, $3.0 million and $2.0 million, respectively, with each installment being subject to certain closing conditions, including the payment of certain existing obligations of the Company to DSM. On September 17, 2019, the Company borrowed the first installment of $3.0 million under the 2019 DSM Credit Agreement, all of which proceeds were used to pay certain existing obligations of the Company to DSM, and issued to DSM a promissory note in the principal amount of $3.0 million. On September 19, 2019, the Company borrowed the second installment of $3.0 million under the 2019 DSM Credit Agreement, all of which proceeds were used to pay certain existing obligations of the Company to DSM, and issued to DSM a promissory note in the principal amount of $3.0 million. On September 23, 2019, the Company borrowed the final installment of $2.0 million under the 2019 DSM Credit Agreement, $1.5 million of which proceeds were used to pay certain existing obligations of the Company to DSM, and issued to DSM a promissory note in the principal amount of $2.0 million. The promissory notes issued under the 2019 DSM Credit Agreement (i) mature on August 7, 2022, (ii) accrue interest at a rate of 12.5% per annum from and including the applicable date of issuance, which interest is payable quarterly in arrears on each January 1, April 1, July 1 and October 1, beginning January 1, 2020, and (iii) are secured by a first-priority lien on certain Company intellectual property licensed to DSM. The Company may at its option repay the amounts outstanding under the 2019 DSM Credit Agreement before the maturity date, in whole or in part, at a price equal to 100% of the amount being repaid plus accrued and unpaid interest on such amount to the date of repayment.

Farnesene Framework Agreement

On December 17, 2020, the Company and DSM entered into a Farnesene Framework Agreement (the "Framework Agreement") providing for (i) the Company's assignment (the "Assignment") to DSM of all of its

obligations under the Farnesene Supply Agreement, dated October 28, 2015, by and between the Company and Givaudan International S.A. ("Givaudan" and the "Givaudan Supply Agreement"), subject to certain conditions precedent, and, (ii) to effectuate DSM's assumption of the Company's rights and obligations under the Givaudan Supply Agreement, (A) the amendment (the "License Amendment") of the Farnesene License Agreement, executed November 14, 2017, by and between the Company and DSM, under which Amyris granted certain licenses in its Farnesene Intellectual Property (as defined therein) to DSM, and (B) the amendment of the Supply Agreement (as amended), and, in consideration for the Assignment and the License Amendment, DSM would pay the Company up to US$ 50,000,000 in the aggregate. In 2020, we recognized $40 million in license revenue in connection with the Framework Agreement.

Transactions with Naxyris

Loan and Security Agreement

On August 14, 2019, the Company, certain of the Company's subsidiaries (the "Subsidiary Guarantors") and, as lender, Naxyris, an existing stockholder of the Company and an investment vehicle owned by Naxos Capital Partners SCA Sicar, which is affiliated with NAXOS S.A.R.L. (Switzerland), for which director Carole Piwnica serves as director, entered into a Loan and Security Agreement (the "Naxyris Loan Agreement") to make available to the Company a secured term loan facility in an aggregate principal amount of up to $10,435,000 (the "Naxyris Loan Facility"), which the Company borrowed in full on August 14, 2019. Loans under the Naxyris Loan Facility have a maturity date of July 1, 2022 and accrue interest at a rate per annum equal to the greater of (i) 12% or (ii) the rate of interest payable with respect to any indebtedness of the Company plus 25 basis points, which interest will be payable monthly in arrears, provided that all interest accruing from and after August 14, 2019 through December 1, 2019 shall be due and payable on December 15, 2019.

The obligations of the Company under the Naxyris Loan Facility are (i) guaranteed by the Subsidiary Guarantors and (ii) secured by a perfected security interest in substantially all of the assets of the Company and the Subsidiary Guarantors (the "Collateral"), junior in payment priority to the Company's obligations under the LSA (see above under "Transactions with Foris—Loan and Security Agreement"), subject to certain limitations and exceptions, as well as the terms of the Intercreditor Agreement (as defined above). Mandatory prepayments of the outstanding amounts under the Naxyris Loan Facility will be required upon the occurrence of certain events, including asset sales, a change in control, and the incurrence of additional indebtedness, subject to certain exceptions and reinvestment rights. Outstanding amounts under the Naxyris Loan Facility must also be prepaid to the extent that the borrowing base exceeds the outstanding principal amount of the loans under the Naxyris Loan Facility. In addition, the Company may at its option prepay the outstanding principal amount of the loans under the Naxyris Loan Facility in full before the maturity date. Any prepayment of the loans under the Naxyris Loan Facility prior to the maturity date, whether pursuant to a mandatory or optional prepayment, is subject to a prepayment charge equal to one year's interest at the then-current interest rate for the Naxyris Loan Facility. Upon the repayment of the loans under the Naxyris loan facility, whether on the maturity date or earlier pursuant to an optional or mandatory prepayment, the Company will pay Naxyris an end of term fee. In addition, (i) the Company will be required to pay a fee equal to 6% of any amount the Company fails to pay within three business days of its due date and (ii) any interest that is not paid when due will be added to principal and will bear compound interest at the applicable rate. The affirmative and negative covenants in the Naxyris Loan Agreement relate to, among other items: (i) payment of taxes; (ii) financial reporting; (iii) maintenance of insurance; and (iv) limitations on indebtedness, liens, mergers, consolidations and acquisitions, transfers of assets, dividends and other distributions in respect of capital stock, investments, loans and advances, and corporate changes. The Naxyris Loan Agreement also contains financial covenants, including covenants related to minimum revenue, liquidity, and asset coverage.

On October 28, 2019, the Company, the Subsidiary Guarantors and Naxyris amended and restated the Naxyris Loan Agreement (the "A&R Naxyris LSA"), pursuant to which the maximum loan commitment of Naxyris under the Naxyris Loan Agreement was increased by $10.4 million. On October 29, 2019, the Company borrowed an

additional $10.4 million (the "October 2019 Naxyris Loan") from Naxyris under the A&R Naxyris LSA, which is subject to the terms and provisions of the A&R Naxyris LSA, including the lien on substantially all of the assets of the Company and the Subsidiary Guarantors. Also, under the terms of A&R Naxyris LSA, the Company owes a 5% end of term fee on the October 2019 Naxyris Loan amount and a $2.0 million term loan fee, both of which are due at July 1, 2022 maturity or upon full repayment of the amounts borrowed under the A&R Naxyris LSA. Also, the Company paid Naxyris an upfront fee of $0.4 million at the funding date of the October 2019 Naxyris Loan. After giving effect to the October 2019 Naxyris Loan amount, there is $24.4 million aggregate principal amount of loans outstanding under the A&R Naxyris LSA. Also, in connection with the entry into the A&R Naxyris LSA, on October 28, 2019, the Company issued to Naxyris a warrant to purchase up to 2.0 million shares of common stock, at an exercise price of $3.87 per share, with an exercise term of two years from issuance (the October 2019 Naxyris Warrant). On March 10, 2020, the Company and Naxyris signed a letter agreement amendment with respect to the Fee Letter referred to in the A&R Naxyris LSA with the purpose of updating the definitions of certain financial covenants (minimum liquidity and borrowing base) under the A&R Naxyris LSA.

Transactions with Total

Convertible Note Exchange and Extensions

On May 15, 2019, the Company exchanged $9.7 million aggregate principal amount of its 6.50% Convertible Senior Notes due 2019 held by Total for a new senior convertible note with an equal principal amount and with substantially identical terms, except that the new note had a maturity date of June 14, 2019, in a private exchange pursuant to the exemption from registration under Section 3(a)(9) of the Securities Act. Effective June 14, 2019, the Company and Total agreed to extend the maturity date of the New Note from June 14, 2019 to July 18, 2019. Effective July 18, 2019, the Company and Total agreed to (i) further extend the maturity date of the New Note from July 18, 2019 to August 28, 2019 and (ii) increase the interest rate on the New Note to 10.5% per annum, beginning July 18, 2019. Effective August 28, 2019, the Company and Total agreed to (i) further extend the maturity date of the New Note from August 28, 2019 to October 28, 2019 and (ii) increase the interest rate on the New Note to 12% per annum, beginning August 28, 2019. On October 31, 2019, the Company and Total agreed, effective as of October 28, 2019, to (i) extend the maturity date of the New Note from October 28, 2019 to December 16, 2019 and (ii) capitalize all interest accruing under the New Note from May 15, 2019 through and including November 14, 2019, in the amount of $0.5 million, which interest would be added to the principal of the New Note, which would begin accruing interest on such new principal amount on November 15, 2019. Effective December 16, 2019, the Company and Total agreed to extend the maturity date of the New Note from December 16, 2019 to January 31, 2020. Effective January 31, 2020, the Company and Total agreed to extend the maturity date of the New Note from January 31, 2020 to March 31, 2020 and the Company paid Total $1.5 million to satisfy all accrued but unpaid interest and to reduce the principal balance of the reissued note by $1.1 million. On April 6, 2020, the Company and Total entered into an extension agreement to extend the maturity date of the New Note to April 30, 2020 and reduce the conversion price of the New Note to $2.87 per share. Effective April 30, 2020, the Company and Total entered into a subsequent extension agreement to extend the maturity date of the New Note to the earlier of the day the Company receives cash proceeds from any private placement of its equity and/or equity-linked securities, and May 31, 2020. On June 2, 2020, Total elected to convert all the outstanding principal and interest due under the New Note totaling $9.3 million into 3,246,489 shares of common stock.

Transactions with Vivo

On April 29, 2019, the Company sold and issued to affiliates of Vivo Capital LLC (collectively, "Vivo"), an entity affiliated with director Frank Kung and which owns greater than five percent of our outstanding common stock and has the right to designate one member of our Board of Directors, 913,529 shares of common stock at a price of $4.76 per share, as well as warrants to purchase up to an aggregate of 1,212,787 shares of common stock at an

exercise price of $4.76 per share, with an exercise term of two years from issuance, in a private placement pursuant to the exemption from registration under Section 4(a)(2) of the Securities Act and Regulation D promulgated under the Securities Act, for aggregate cash proceeds to the Company of $4.5 million. The exercise price of the warrants issued in the foregoing private placement is subject to standard adjustments but does not contain any anti-dilution protection, and the warrants only permit "cashless" or "net" exercise after the six-month anniversary of issuance, and only to the extent that there is not an effective registration statement covering the resale of the shares of common stock underlying the applicable warrant. In addition, in connection with the foregoing private placement, the Company agreed not to effect any exercise or conversion of any Company security, and Vivo agreed not to exercise or convert any portion of any Company security, to the extent that after giving effect to such exercise or conversion, Vivo, together with its affiliates, would beneficially own in excess of 19.99% of the number of shares of common stock outstanding immediately after giving effect to such exercise or conversion, and the warrants contained a similar limitation.

On June 4, 2020, the Company entered into a security purchase agreement with Vivo for the private placement of 3,689,225 shares of our common stock and 8,932.32 shares of our Preferred Stock, convertible into 2,977,440 shares of our common stock at the Purchase Price, resulting in an aggregate purchase price of approximately $20 million. The Preferred Stock was automatically converted into shares of our common stock on August 17, 2020.

Transactions with Daling

On May 20, 2020, the Company entered into a purchase agreement with Daling Xinchao (Beijing) Trade Company Limited ("Daling"), an entity affiliated with our director Lisa Qi, pursuant to which, among other terms, Daling could submit purchase orders of Purecane Cooking Sweetener through December 31, 2020, with no commitment for the purchase or supply volume or product price, which will be established in each accepted purchase order. In 2020, we recognized approximately $40,000 in revenues from Daling under this agreement.

Consulting Agreement

Effective June 7, 2019, we entered into a consulting agreement with Joel Cherry, our former President, Research and Development who resigned from the Company on such date (the "Cherry Consulting Agreement"). Pursuant to the Cherry Consulting Agreement, Dr. Cherry agreed to perform certain consulting services for the Company, and as compensation for such services, Dr. Cherry's outstanding equity awards will continue to remain outstanding and vest in accordance with, and subject to, the 2010 EIP and the relevant award agreements during the term of the Cherry Consulting Agreement. The Cherry Consulting Agreement expired on June 8, 2020.

Officer Loans

In March, April, May and June 2019, Kathleen Valiasek, the Company's former CFO and current Chief Business Officer, provided loans to the Company in an aggregate principal amount of $1.2 million. Such amounts were repaid by the Company no later than twelve days after such loans were made and interest was accrued on each loan, while outstanding, at a rate of 12% per annum, for which the total interest accrued was $2,296.

Compensation Arrangements

Stephanie Kung, the daughter of director Frank Kung, is a non-executive employee of the Company and received employment compensation in excess of $120,000 in 2020 and we expect that she will receive employment compensation in excess of $120,000 in 2021.

Indemnification Arrangements

Please see "Executive Compensation—Limitation of Liability and Indemnification" above for information regarding our indemnification arrangements with our directors and executive officers.

Executive Compensation and Employment Arrangements

Please see "Executive Compensation" above for information regarding our compensation arrangements with our executive officers, including equity awards and employment agreements with our executive officers.

Registration Rights Agreements

Certain of our stockholders, including certain entities affiliated with our directors and/or holders of five percent or more of our outstanding common stock, including DSM, Foris, and Vivo, hold registration rights pursuant to the following:

- Letter agreement, dated July 29, 2015, by and among us and certain investors
- Securities Purchase Agreement, dated May 8, 2017, by and among us and certain investors
- Securities Purchase Agreement, dated August 2, 2017, by and between us and DSM International B.V.
- Stockholder Agreement, dated August 3, 2017, by and between us and affiliates of Vivo Capital LLC
- Amended and Restated Stockholder Agreement, dated August 7, 2017, by and between us and DSM International B.V.
- Securities Purchase Agreements, dated January 31, 2020, by and between us and the investor named therein, including Foris
- Security Purchase Agreements, dated June 1, 2020 and June 4, 2020, by and between us and the investors named therein, including Foris, Vivo, and FMR, LLC
- Exchange and Settlement Agreement, dated March 1, 2021, by and between us and Schottenfeld Opportunities Fund II, L.P., Phase Five Partners, LP, and Koyote Trading, LLC

Related Party Transactions Policy

Our Related Party Transactions Policy adopted by our Board of Directors requires that any transaction with a related party that must be reported under applicable SEC rules, other than certain compensation related matters, must be reviewed and approved or ratified by the Audit Committee of our Board of Directors or another independent body of our Board of Directors. Our Related Party Transactions Policy contains specific procedures to be followed, and factors to be considered, in connection with the review of such transactions, but does not contain specific standards for approval of such transactions.

Annual Meeting Information

Information Regarding Solicitation and Voting

In accordance with rules and regulations adopted by the SEC, we have elected to provide our stockholders with access to our proxy materials over the Internet. Accordingly, we intend to send a Notice of Internet Availability of Proxy Materials (the "Notice") on or about April 14, 2021 to most of our stockholders who owned our common stock at the close of business on April 1, 2021. The Notice includes instructions on how you can access our Annual Report and Proxy Statement and other soliciting materials on the Internet or, if you wish, request a printed set of such materials, a list of the matters to be considered at the 2021 Annual Meeting, and instructions as to how your shares can be voted. Most stockholders will not receive a printed copy of the proxy materials unless they request one in the manner set forth in the Notice. This permits us to conserve natural resources and reduces our printing costs, while giving stockholders a convenient and efficient way to access our proxy materials and vote their shares.

We will bear the expense of soliciting proxies. In addition to these proxy materials, our directors and employees (who will receive no compensation in addition to their regular salaries) may solicit proxies in person, by telephone or by email. We will reimburse Intermediaries for reasonable charges and expenses incurred in forwarding solicitation materials to their clients.

Voting by Internet. You may submit your proxy over the Internet by following the instructions provided in the Notice, or, if you receive printed proxy materials, by following the instructions for Internet or telephone voting provided with your proxy materials and on your proxy card or voting instruction form.

Voting by telephone. You may submit your proxy by telephone by following the instructions provided in the Notice, or, if you receive printed proxy materials, by following the instructions for Internet or telephone voting provided with your proxy materials and on your proxy card or voting instruction form.

Voting by mail. If you receive printed proxy materials, you may submit your proxy by mail by completing, signing, dating and returning your proxy card or, for shares held beneficially in street name, by following the voting instructions included by your broker or other Intermediary. If you provide specific voting instructions, your shares will be voted as you have instructed.

Questions and Answers About the Annual Meeting and Voting

Who can vote at the meeting?

The Board set April 1, 2021, as the record date for the meeting. If you owned shares of our common stock as of the close of business on April 1, 2021, you may attend and vote your shares at the meeting. Each stockholder is entitled to one vote for each share of common stock held on all matters to be voted on. As of April 1, 2021, there were 273,266,917 shares of our common stock outstanding and entitled to vote (as reflected in the records of our stock transfer agent).

Only stockholders of record at the close of business on the record date may vote at the meeting or at any adjournment thereof. A list of stockholders eligible to vote at the meeting will be available for review for any purpose relating to the meeting during our regular business hours at our headquarters at 5885 Hollis Street, Suite 100, Emeryville, California 94608 for the ten days prior to the meeting as well as at the virtual meeting.

How can I attend and vote at the meeting?

In consideration of public health concerns relating to COVID-19, the Annual Meeting will be held virtually; you will not be able to attend the Annual Meeting in person. If your shares of Amyris common stock are registered directly in your name with our stock transfer agent, EQ Shareowner Services you are considered to be the stockholder of record with respect to those shares. As the stockholder of record, you have the right to vote in person at the meeting.

If your shares are held in a brokerage account or by another Intermediary, you are considered the beneficial owner of shares held in street name. As the beneficial owner, you are also invited to attend the meeting. However, since a beneficial owner is not the stockholder of record, you may not vote these shares in person at the meeting unless you obtain a "legal proxy" from the Intermediary (usually your broker) that is the record holder of the shares, giving you the right to vote the shares at the meeting. The meeting will be held virtually on Friday, May 28, 2021 at 2:00 p.m. Pacific Time.

To attend the meeting, you must pre-register no later than May 28, 2021, 2:00 p.m. Pacific Time by visiting www.proxydocs.com/AMRS and using your unique control number provided in your Notice, proxy card or voting instruction form. Upon completing your pre-registration, you will receive instructions via email, including your unique weblink to access the meeting. Upon accessing the meeting, you will find a voting option on the landing page. If you have submitted your votes prior to the meeting and wish to change your vote, you may do when you access the virtual meeting.

Whether or not you plan to attend the Annual Meeting, we urge you to vote and submit your proxy in advance of the meeting. For information on how to vote prior to the Annual Meeting, see *"How can I vote my shares without attending the Annual Meeting?"*

How can I ask questions during the meeting?

During the pre-registration process, you will be able to submit questions for the question and answer session that will immediately follow the adjournment of the Annual Meeting. We will answer pre-submitted questions that comply with the meeting rules of conduct, subject to time constraints.

How can I vote my shares without attending the meeting?

Whether you hold shares directly as a registered stockholder of record or beneficially in street name, you may vote without attending the meeting. You may vote by granting a proxy or, for shares held beneficially in street name, by submitting voting instructions to your broker, bank or other Intermediary. In most cases, you will be able to do this by using the Internet, by telephone or by mail according to the instructions above.

Why did I receive a Notice of Internet Availability of Proxy Materials in the mail instead of a full set of proxy materials?

We are pleased to take advantage of the SEC rule that allows companies to furnish their proxy materials over the Internet. Accordingly, we have sent to most of our stockholders of record and beneficial owners a Notice of Internet Availability of Proxy Materials. Instructions on how you can access our Annual Report and Proxy Statement and other soliciting materials on the Internet or, if you wish, request a printed set of such materials, a list of the matters to be considered at the 2021 Annual Meeting, and instructions as to how your shares can be voted may be found in the Notice.

We are using the Internet as our primary means of furnishing proxy materials to our stockholders. As a result, most stockholders will not receive paper copies of our proxy materials. We will instead send most stockholders a Notice with instructions for accessing the proxy materials and voting over the Internet. The Notice also provides information on how stockholders

can obtain paper copies of our proxy materials if they wish to do so.

If your shares are held of record by a broker, bank or other custodian, nominee, trustee or fiduciary (an "Intermediary") and you have not given your Intermediary specific voting instructions, your Intermediary will NOT be able to vote your shares with respect to most of the proposals, including the election of directors.

If you do not provide voting instructions over the Internet, by telephone, or by returning a completed, signed and dated proxy card or voting instruction form, your shares will not be voted with respect to those matters. Even if you have voted by proxy, you may still vote in person if you attend the meeting. Please note, however, that if your shares are held of record by an Intermediary and you wish to vote at the meeting, you must obtain a proxy issued in your name from that Intermediary.

Why did I receive a full set of proxy materials in the mail instead of a Notice of Internet Availability of Proxy Materials?

Some stockholders may have instructed our transfer agent or their Intermediary to deliver stockholder communications, such as proxy materials, in paper form. If you would prefer to receive your proxy materials over the Internet, please follow the instructions provided on your proxy card or voting instruction form to vote using the Internet and, when prompted, indicate that you agree to receive or access stockholder communications electronically in future years.

Can I vote my shares by filling out and returning the Notice?

No. The Notice will, however, provide instructions on how to vote by Internet, by telephone, by requesting and returning a paper proxy card or voting instruction form, or by submitting a ballot in person at the meeting.

What is a quorum?

A quorum is necessary to hold a valid meeting. The holders of a majority of our outstanding shares of common stock as of the record date must be present in person or represented by proxy at the meeting in order for there to be a quorum, which is required to hold the meeting and conduct business. If there is no quorum, the holders of a majority of the shares present at the meeting may adjourn the meeting to another date.

You will be counted as present at the meeting if you are present and entitled to vote in person at the meeting or you have properly submitted a proxy card or voting instruction form, or voted by telephone or over the Internet. Both abstentions and broker non-votes (as described below) are counted for the purpose of determining the presence of a quorum.

What proposals will be voted on at the meeting?

There are four proposals scheduled to be voted on at the meeting:

- **Proposal 1**—Election of the four Class II directors nominated by the Board and named herein to serve on the Board for a three-year term.
- **Proposal 2**—Ratification of the appointment of Macias Gini & O'Connell LLP as our independent registered public accounting firm for the fiscal year ending December 31, 2021.
- **Proposal 3**—Approval of our Amended and Restated 2010 Employee Stock Purchase Plan.
- **Proposal 4**—Approval of an amendment to our restated Certificate of Incorporation to effect an increase in the total number of our authorized shares from 355,000,000 to 455,000,000 and in

the total number of authorized shares of common stock from 350,000,000 to 450,000,000.

No appraisal or dissenters' rights exist for any action proposed to be taken at the meeting. We will also consider any other business that properly comes before the meeting. As of the date of this Proxy Statement, we are not aware of any other matters to be submitted for consideration at the meeting. If any other matters are properly brought before the meeting, the persons named in the enclosed proxy card or voting instruction form will vote the shares they represent using their best judgment.

How does the Board recommend I vote on the proposals?

The Board recommends that you vote:

- FOR each of the director nominees named in this Proxy Statement;
- FOR the ratification of Macias Gini & O'Connell LLP as our independent registered public accounting firm for the fiscal year ending December 31, 2021;
- FOR the approval our Amended and Restated 2010 Employee Stock Purchase Plan; and
- FOR the amendment to our restated Certificate of Incorporation to increase the total number of authorized shares of our common stock.

What happens if I do not give specific voting instructions?

If you are a stockholder of record and you either indicate when voting on the Internet or by telephone that you wish to vote as recommended by the Board, or, if you receive printed proxy materials, you sign and return a proxy card without giving specific voting instructions, then the proxy holders will vote your shares in the manner recommended by the Board on all matters presented in this Proxy Statement and as the proxy holders may determine in their discretion with respect to any other matters properly presented for a vote at the meeting.

If you are a beneficial owner of shares held in street name and do not provide the Intermediary that holds your shares with specific voting instructions, under stock market rules, the Intermediary that holds your shares may generally vote at its discretion only on routine matters and cannot vote on non-routine matters. If the Intermediary that holds your shares does not receive specific instructions from you on how to vote your shares on a non-routine matter, the Intermediary will inform the inspector of election that it does not have the authority to vote on this matter with respect to your shares. This is generally referred to as a "broker non-vote." For purposes of voting on non-routine matters, broker non-votes will not count as votes cast on such matters and, therefore, will not affect the outcome of Proposal 1 (which requires a plurality of votes properly cast in person or by proxy) or Proposal 3 (which requires a majority of votes properly cast in person or by proxy), but will have the effect of a vote against Proposal 4 (which require votes from a majority of our outstanding shares of common stock entitled to vote at the meeting).

Which proposals are considered "routine" and which are considered "non-routine"?

The ratification of the appointment of Macias Gini & O'Connell LLP as our independent registered public accounting firm for 2021 (Proposal 2) is considered a "routine" matter under applicable rules. The election of directors (Proposal 1), the approval of our Amended and Restated 2010 Employee Stock Purchase Plan (Proposal 3), and the approval of the amendment to our restated Certificate of Incorporation (Proposal 4) are considered non-routine under applicable rules. An Intermediary cannot vote without instructions on non-routine matters, and therefore we expect there to be broker non-votes on Proposal 1, Proposal 3, and Proposal 4.

How are votes counted?

Votes will be counted by the inspector of election appointed for the meeting. The inspector of election will separately count "For" and "Withhold" votes and any broker non-votes in the election of directors (Proposal 1). With respect to the other proposals, the inspector of election will separately count "For" and "Against" votes, abstentions and any broker non-votes. Abstentions and broker non-votes will not count toward the vote totals for Proposals 1 and 3, but will be counted with the same effect as an "Against" vote for Proposal 4.

What is the vote required to approve each of the Board's proposals?

- **Proposal 1—Election of the Board's four nominees for director.** The affirmative vote of a plurality, or the largest number, of the shares of our common stock present in person or by proxy at the Annual Meeting and entitled to vote is required for the election of the directors. This means that the four director nominees who receive the highest number of "For" votes (among votes properly cast in person or by proxy) will be elected to the Board. Broker non-votes will not count toward the vote total for this proposal and therefore will not affect the outcome of this proposal.
- **Proposal 2—Ratification of the appointment of Macias Gini & O'Connell LLP** as our independent registered public accounting firm for the fiscal year ending December 31, 2021. This proposal must receive a "For" vote from the holders of a majority of the shares of our common stock properly casting votes for or against this proposal at the Annual Meeting in person or by proxy. Abstentions will not count toward the vote total for this proposal and therefore will not affect the outcome of this proposal.
- **Proposal 3—Approval of our Amended and Restated 2010 Employee Stock Purchase Plan.** This proposal must receive a "For" vote from the holders of a majority of the shares of common stock properly casting votes on this proposal at the Annual Meeting in person or by proxy. Abstentions and broker non-votes will not count toward the vote total for this proposal and therefore will not affect the outcome of this proposal.
- **Proposal 4—Approval of an amendment to our restated Certificate of Incorporation to effect an increase in the total number of authorized shares of our common stock.** This proposal must receive a "For" vote from the holders of a majority of our outstanding shares of common stock entitled to vote at the Annual Meeting, irrespective of the number of votes cast on this proposal at the meeting. Abstentions and broker non-votes will be counted and have the same effect as an "Against" vote for this proposal.

How can I revoke my proxy and change my vote after I return my proxy card?

You may revoke your proxy and change your vote at any time before the final vote at the meeting. If you are a stockholder of record, you may do this by signing and submitting a new proxy card with a later date (if you receive printed proxy materials), by using the Internet or voting by telephone, or by attending the meeting and voting in person. Attending the meeting alone will not revoke your proxy unless you specifically request that your proxy be revoked. If you hold shares through an Intermediary, you must contact that Intermediary directly to revoke any prior voting instructions.

How can I find out the voting results of the meeting?

The preliminary voting results will be announced at the meeting. The final voting results will be reported in a Current Report on Form 8-K, which we expect to file with the SEC within four business days after the meeting. If final voting results are not available within four business days after the meeting, we intend to file a Current Report on Form 8-K reporting the preliminary voting results within that period, and subsequently report the final voting results in an amendment to the Current Report on Form 8-K within four business days after the final voting results are known to us.

Other Matters

Householding of Proxy Materials

The SEC has adopted rules that permit companies and Intermediaries to satisfy the delivery requirements for Proxy Statements and Annual Reports, including Notices of Internet Availability of Proxy Materials, with respect to two or more stockholders sharing the same address by delivering a single Notice of Internet Availability of Proxy Materials (the "Notice") or other proxy materials addressed to those stockholders. This process, which is commonly referred to as "householding," potentially means extra convenience for stockholders and cost savings for companies.

A number of brokers with account holders who are Amyris stockholders may be "householding" our proxy materials. A single copy of the Notice or other proxy materials may be delivered to multiple stockholders sharing an address unless contrary instructions have been received from the affected stockholders. Once you have received notice from your broker that they will be "householding" communications to your address, "householding" will continue until you are notified otherwise or you submit contrary instructions. If, at any time, you no longer wish to participate in "householding" and would prefer to receive a separate Notice or other proxy materials, you may: (1) notify your broker; (2) direct your written request to Amyris Investor Relations at 5885 Hollis Street, Suite 100, Emeryville, California 94608 or to investor@amyris.com; or (3) contact Amyris Investor Relations at (510) 740-7481. Stockholders who currently receive multiple copies of the Notice or other proxy materials at their addresses and would like to request "householding" of their communications should contact their brokers or Amyris Investor Relations at the address or telephone number above. In addition, we will promptly deliver, upon written or oral request to the address or telephone number above, a separate copy of the Notice or other proxy materials to a stockholder at a shared address to which a single copy of such documents was delivered.

Available Information

We will provide to any stockholder entitled to vote at our 2021 Annual Meeting of Stockholders, at no charge, a copy of our Annual Report on Form 10-K for the fiscal year ended December 31, 2020 (the "Form 10-K"), including the financial statements and the financial statement schedules contained in the Form 10-K. We make our Annual Reports on Form 10-K, as well as our other SEC filings, available free of charge through the investor relations section of our website located at https://investors.amyris.com/annual-reports.com as soon as reasonably practicable after they are filed with or furnished to the SEC. Information contained on or accessible through our website or contained on other websites is not deemed to be part of this Proxy Statement. In addition, you may request a copy of the Form 10-K by sending an e-mail request to Amyris Investor Relations at investor@amyris.com, calling (510) 740-7481, or writing to Amyris Investor Relations at 5885 Hollis Street, Suite 100, Emeryville, California 94608.

Stockholder Proposals to be Presented at Next Annual Meeting

Stockholder proposals may be included in our Proxy Statement for an annual meeting so long as they are provided to us on a timely basis and satisfy the other conditions set forth in SEC regulations under Rule 14a-8 regarding the inclusion of stockholder proposals in company-sponsored proxy materials. For a stockholder proposal to be considered for inclusion in our Proxy Statement for the annual meeting to be held in 2022, we must receive the proposal at our principal executive offices, addressed to the Secretary, no later than December 13, 2021. In addition, a stockholder proposal that is not intended for inclusion in our Proxy Statement under Rule 14a-8 may be brought before the 2021 Annual Meeting so long as we receive information and notice of the proposal in compliance with the requirements set forth in our bylaws, addressed to the Secretary at our principal executive offices, not later than March 13, 2022 nor earlier than February 11, 2022.

The Board knows of no other matters that will be presented for consideration at the Annual Meeting. If any other matters are properly brought before the meeting, it is the intention of the persons named in the accompanying proxy to vote on such matters in accordance with their best judgment.

By Order of the Board of Directors

Nicole Kelsey
General Counsel and Secretary
April 12, 2021

Amyris, Inc.
5885 Hollis Street, Suite 100
Emeryville, California 94608

Forward-Looking Statements

This Proxy Statement contains "forward-looking statements" within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934. These statements may be identified by their use of such words as "expects," "anticipates," "intends," "hopes," "believes," "could," "may," "will," "projects", "continue", and "estimates," and other similar expressions, but these words are not the exclusive means of identifying such statements. We caution that a variety of factors, including but not limited to the following, could cause our results to differ materially from those expressed or implied in our forward-looking statements: our cash position and ability to fund our operations; difficulties in predicting future revenues and financial results; the potential loss of, or inability to secure relationships with, key distributors, customers or partners; the ongoing impact of the COVID-19 pandemic on our business, financial condition and results of operations; our lack of revenues generated from the sale of our renewable products; our inability to decrease costs to enable sales of our products at competitive prices; delays in production and commercialization of products due to technical, operational, cost and counterparty challenges; challenges in developing a customer base in markets with established and sophisticated competitors; and other risks detailed from time to time in filings we make with the Securities and Exchange Commission, including our Annual Reports on Form 10-K, our Quarterly Reports on Form 10-Q and our Current Reports on Form 8-K. Except as required by law, we assume no obligation to update any forward-looking information that is included or incorporated by reference in this Proxy Statement, whether as a result of new information, future events, or otherwise.

Appendix A — Amended and Restated 2010 Employee Stock Purchase Plan

1. **Establishment of Plan**. Amyris, Inc. a Delaware corporation (the "***Company***"), proposes to grant options to purchase shares of Common Stock to eligible employees of the Company and its Participating Corporations pursuant to this Plan. The Company intends this Plan to qualify as an "employee stock purchase plan" under Code Section 423 and this Plan will be so construed. Any term not expressly defined in this Plan but defined for purposes of Section 423 of the Code shall have the same definition herein. However, with regard to offers of options for purchase of the Common Stock under the Plan to employees outside the United States working for a Participating Corporation, the Board may offer a subplan or an option that is not intended to meet the Code Section 423 requirements, provided, if necessary under Code Section 423, that the other terms and conditions of the Plan are met. Subject to Section 14, a total of 2,466,666 shares of Common Stock is reserved for issuance under this Plan. In addition, on January 1 of each year, for nine years, commencing on January 1, 2022, the aggregate number of shares of Common Stock reserved for issuance under the Plan will be increased automatically by the number of shares equal to one percent (1%) of the total number of outstanding shares of all classes of the Company's common stock on the immediately preceding December 31 (rounded down to the nearest whole share); provided that the Board or the Committee may in its sole discretion reduce the amount of the increase in any particular year; and provided, further, that the aggregate number of shares of Common Stock issued over the term of this Plan will not exceed 24,666,660. The number of shares reserved for issuance under this Plan and the maximum number of shares that may be issued under this Plan will be subject to adjustments effected in accordance with Section 14 of this Plan. Capitalized terms not defined elsewhere in the text are defined in Section 27.

2. **Purpose**. The purpose of this Plan is to provide eligible employees of the Company and Participating Corporations with a means of acquiring an equity interest in the Company through payroll deductions, to enhance such employees' sense of participation in the affairs of the Company and Participating Corporations, and to provide an incentive for continued employment.

3. **Administration.**

   (a) The Plan will be administered by the Compensation Committee of the Board or by the Board (as applicable, the "***Committee***"). Subject to the provisions of this Plan and the limitations of Section 423 of the Code or any successor provision in the Code, all questions of interpretation or application of this Plan will be determined by the Committee and its decisions will be final and binding upon all Participants. The Committee will have full and exclusive discretionary authority to construe, interpret, and apply the terms of the Plan, to determine eligibility and determine which entities will be Participating Corporations and whether an offer to Participating Corporations is intended to meet Code Section 423 requirements and to decide upon any and all claims filed under the Plan. Every finding, decision, and determination made by the Committee will, to the full extent permitted by law, be final and binding upon all parties. The Committee will have the authority to determine the Fair Market Value (which determination will be final, binding, and conclusive for all purposes) in accordance with Section 8 below and to interpret Section 8 of the Plan in connection with circumstances that impact the Fair Market Value. Members of the Committee will receive no compensation for their services in connection with the administration of this Plan, other than standard fees as established from time to time by the Board for services rendered by Board members serving on the Board or its Committees. All expenses incurred in connection with the administration of this Plan will be paid by the Company. For purposes of this Plan, the Committee may designate separate offerings under the Plan (the terms of which need not be identical) in which eligible employees of one or more Participating Corporations will participate, even if the dates of the applicable Offering Periods of each such offering are identical. The Committee may also establish rules to govern

transfers of employment among the Company and any Participating Corporation, consistent with the applicable requirements of Code Section 423 and the terms of the Plan.

(b) The Committee may adopt such rules, procedures, and sub-plans as are necessary or appropriate to permit the participation in the Plan by eligible employees who are citizens or residents of a jurisdiction and/or employed outside the United States, the terms of which sub-plans may take precedence over other provisions of this Plan, with the exception of the provisions in Section 1 above setting forth the number of shares of Common Stock reserved for issuance under the Plan; provided that unless otherwise superseded by the terms of such sub-plan, the provisions of this Plan will govern the operation of such sub-plan. Further, the Committee is specifically authorized to adopt rules and procedures regarding the application of the definition of Compensation (as defined below) to Participants on payrolls outside of the United States, handling of payroll deductions and other contributions, taking of payroll deductions and making of other contributions to the Plan, establishment of bank or trust accounts to hold contributions, payment of interest, establishment of the exchange rate applicable to payroll deductions taken and other contributions made in a currency other than U.S. dollars, obligations to pay payroll tax, determination of beneficiary designation requirements, tax withholding procedures, and handling of stock certificates that vary with applicable local requirements.

4. **Eligibility**. Any employee of the Company or the Participating Corporations is eligible to participate in an Offering Period under this Plan, except that the Committee may exclude any or all of the following (other than where exclusion of such employees is prohibited by applicable law):

(a) employees who are not employed by the Company or a Participating Corporation prior to the beginning of such Offering Period or prior to such other time period as specified by the Committee ; provided, that unless the Committee determines otherwise, eligible employees must have been employed with the Company or Participating Corporation for no less than one (1) month prior to the first day of an Offering Period;

(b) employees who are customarily employed for twenty (20) or less hours per week;

(c) employees who are customarily employed for five (5) months or less in a calendar year;

(d) (i) employees who are "highly compensated employees" of the Company or any Participating Corporation (within the meaning of Section 414(q) of the Code), or (ii) any employee who are "highly compensated employees" with compensation above a specified level, who is an officer and/or is subject to the disclosure requirements of Section 16(a) of the Exchange Act;

(e) employees who are citizens or residents of a foreign jurisdiction (without regard to whether they are also a citizen of the United States or a resident alien (within the meaning of Section 7701(b)(1)(A) of the Code)) if either (i) such employee's participation is prohibited under the laws of the jurisdiction governing such employee, or (ii) compliance with the laws of the foreign jurisdiction would violate the requirements of Section 423 of the Code;

(f) employees who do not meet any other eligibility requirements that the Committee may choose to impose (within the limits permitted by the Code); and

(g) individuals who provide services to the Company or any of its Participating Corporations as independent contractors who are reclassified as common law employees for any reason except for federal income and employment tax purposes.

The foregoing notwithstanding, employees who, together with any other person whose stock would be attributed to such employee pursuant to Section 424(d) of the Code, own stock or hold options to purchase stock possessing five percent (5%) or more of the total combined voting power or value of all classes of stock of the Company or any of its Participating Corporations or who, as a result of being granted an option under this Plan with respect to

such Offering Period, would own stock or hold options to purchase stock possessing five percent (5%) or more of the total combined voting power or value of all classes of stock of the Company or any of its Participating Corporations may not participate.

5. **Offering Dates.**

(a) The Committee will determine the duration and commencement date of each Offering Period and Purchase Period, provided that (i) an Offering Period will in no event be longer than twenty-seven (27) months, except as otherwise provided by an applicable subplan and (ii) no Purchase Period will end later that the last day of the Offering Period in which it begins. Offering Periods may be consecutive or overlapping. Each Offering Period may consist of one or more Purchase Periods during which payroll deductions of Participants are accumulated under this Plan.

(b) The Offering Periods under this Plan shall commence on each May 16th and November 16th of each year, with each such Offering Period consisting of two 6-month Purchase Periods, except as otherwise provided by an applicable sub-plan, or on such other date determined by the Committee.

6. **Participation in this Plan.**

(a) **Enrollment.** An eligible employee determined in accordance with Section 4 may elect to become a Participant by submitting a subscription agreement, or electronic representation thereof, to the Company and/or via the standard process of a third party administrator authorized by the Company, prior to the commencement of the Offering Period to which such agreement relates in accordance with such rules as the Committee may determine.

(b) **Continued Enrollment in Offering Periods**. Once an employee becomes a Participant in an Offering Period, then such Participant will automatically participate in each subsequent Offering Period commencing immediately following the last day of such prior Offering Period at the same contribution level unless the Participant withdraws or is deemed to withdraw from this Plan or terminates further participation in the Offering Period as set forth in Section 11 below or otherwise notifies the Company of a change in the Participant's contribution level by filing an additional subscription agreement or electronic representation thereof with the Company and/or the Company's third party administrator, prior to the next Offering Period. A Participant that is automatically enrolled in a subsequent Offering Period pursuant to this section (i) is not required to file any additional subscription agreement in order to continue participation in this Plan, and (ii) will be deemed to have accepted the terms and conditions of the Plan, any sub-plan, and subscription agreement in effect at the time each subsequent Offering Period begins, subject to Participant's right to withdraw from the Plan in accordance with the withdrawal procedures in effect at the time.

7. **Grant of Option on Enrollment**. Becoming a Participant with respect to an Offering Period will constitute the grant (as of the Offering Date) by the Company to such Participant of an option to purchase on the Purchase Date up to that number of shares of Common Stock determined by a fraction the numerator of which is the amount of the contribution level for such Participant multiplied by such Participant's Compensation (as defined in Section 9 below) during such Purchase Period and the denominator of which is eighty-five percent (85%) of the lower of (a) the Fair Market Value on the Offering Date or (b) the Fair Market Value on the Purchase Date, but in no event less than the par value of a share; and provided, further, that the number of shares of Common Stock subject to any option granted pursuant to this Plan will not exceed the lesser of (x) the maximum number of shares set by the Committee pursuant to Section 10(b) below with respect to the applicable Purchase Date or (y) the maximum number of shares which may be purchased pursuant to Section 10(a) below with respect to the applicable Purchase Date.

8. **Purchase Price.** The Purchase Price in any Offering Period will be eighty-five percent (85%) of the lesser of:

   (a) the Fair Market Value on the Offering Date or

   (b) the Fair Market Value on the Purchase Date.

9. **Payment of Purchase Price; Payroll Deduction Changes; Share Issuances**.

   (a) The Purchase Price of the shares is accumulated by regular payroll deductions made during each Offering Period, unless the Committee determines that contributions may be, or are required to be, made in another form (due to local law requirements, in another form with respect to categories of Participants outside the United States). The deductions are made as a percentage of the Participant's Compensation in one percent (1%) increments not less than one percent (1%), nor greater than fifteen percent (15%) or such lower limit set by the Committee. "***Compensation***" means all compensation categorized by the Company as total compensation including base salary or regular hourly wages, overtime, holiday, vacation and sick pay and shift premiums and excluding, to the extent permitted by Code Section 423, bonuses, salary continuation, relocation assistance payments, geographical hardship pay, noncash prizes and awards, automobile allowances, severance type payments, and nonqualified deferred executive compensation (including amounts attributable to equity compensation). For purposes of determining a Participant's Compensation, any election by such Participant to reduce his or her regular cash remuneration under Sections 125 or 401(k) of the Code (or in foreign jurisdictions, equivalent salary deductions) will be treated as if the Participant did not make such election. Payroll deductions shall commence on the first payday following the beginning of an Offering Period, and shall continue to the end of the applicable Offering Period unless sooner altered or terminated as provided in this Plan. Notwithstanding the foregoing, the terms of any subplan may permit matching shares without the payment of any purchase price.

   (b) Subject to Section 25 below and to the rules of the Committee, a Participant may decrease the rate of payroll deductions during an ongoing Offering Period by filing with the Company and/or the Company's third party administrator a new authorization for payroll deductions, with the new rate to become effective as soon as reasonably practicable and continuing for the remainder of the Offering Period unless changed as described below. A decrease in the rate of payroll deductions may be made once during an Offering Period or more or less frequently under rules determined by the Committee. A Participant may increase or decrease the rate of payroll deductions for any subsequent Offering Period by filing with the Company and/or the Company's third party administrator a new authorization for payroll deductions prior to the beginning of such Offering Period or such other time period as may be specified by the Committee.

   (c) Subject to Section 25 below and to the rules of the Committee, a Participant may reduce his or her payroll deduction percentage to zero during an Offering Period by filing with the Company and/or the Company's third party administrator a request for cessation of payroll deductions, with such reduction to become effective as soon as reasonably practicable and after such reduction becomes effective, no further payroll deductions will be made for the duration of the Offering Period. Payroll deductions credited to the Participant's account prior to the effective date of the request will be used to purchase shares of Common Stock in accordance with Section (e) below. A reduction of the payroll deduction percentage to zero will be treated as such Participant's withdrawal from such Offering Period and the Plan, effective as of the day after the next Purchase Date following the filing date of such request with the Company.

   (d) All payroll deductions made for a Participant are credited to his or her account under this Plan and are deposited with the general funds of the Company, and the Company will not be obligated to segregate such payroll deductions, except to the extent required by local legal requirements outside the United States. No interest accrues on the payroll deductions, except to the extent required by local legal

requirements outside the United States. All payroll deductions received or held by the Company may be used by the Company for any corporate purpose, except to the extent necessary to comply with local legal requirements outside the United States.

(e) On each Purchase Date, so long as this Plan remains in effect and provided that the Participant has not submitted a signed and completed withdrawal form before that date which notifies the Company and/or the Company's third party administrator that the Participant wishes to withdraw from that Offering Period under this Plan and have all payroll deductions accumulated in the account maintained on behalf of the Participant as of that date returned to the Participant, the Company will apply the funds then in the Participant's account to the purchase of whole shares of Common Stock reserved under the option granted to such Participant with respect to the Offering Period to the extent that such option is exercisable on the Purchase Date. The Purchase Price will be as specified in Section 8 of this Plan. Any amount remaining in a Participant's account on a Purchase Date which is less than the amount necessary to purchase a full share of Common Stock will be carried forward into the next Purchase Period or Offering Period, as the case may be (except to the extent required by local legal requirements outside the United States), or otherwise treated as determined by the Committee. In the event that this Plan has been oversubscribed, all funds not used to purchase shares on the Purchase Date will be refunded to the Participant without interest (except to the extent required by local legal requirements outside the United States). No Common Stock will be purchased on a Purchase Date on behalf of any employee whose participation in this Plan has terminated prior to such Purchase Date (except to the extent required by local legal requirements outside the United States).

(f) As promptly as practicable after the Purchase Date, the Company will issue shares for the Participant's benefit representing the shares purchased upon exercise of his or her option.

(g) Unless determined otherwise by the Committee, the shares issued pursuant to Section 9(f) above shall be deposited into an account established in the Participant's name at the ESPP Broker. A Participant shall be free to undertake a disposition (as that term is defined in Section 424(c) of the Code) of the shares in his or her ESPP Broker account at any time, whether by sale, exchange, gift, or other transfer of legal title, but in the absence of such a disposition of the shares, the shares must remain in the Participant's ESPP Broker account until the holding period set forth in Section 423(a) of the Code has been satisfied. With respect to shares for which the Section 423(a) holding period has been satisfied, the Participant may move those shares to another brokerage account of Participant's choosing. Notwithstanding the above, a Participant who is not subject to income taxation under the Code may move his or her shares to another brokerage account of his or her choosing at any time, without regard to the satisfaction of the Section 423(a) holding period.

(h) During a Participant's lifetime, his or her option to purchase shares hereunder is exercisable only by him or her. The Participant will have no interest or voting right in shares covered by his or her option until such option has been exercised.

(i) To the extent required by applicable federal, state, local, or foreign law, a Participant will make arrangements satisfactory to the Company and the Participating Corporation employing the Participant for the satisfaction of any withholding tax obligations that arise in connection with the Plan. The Company or any Participating Corporation, as applicable, may withhold, by any method permissible under applicable law, the amount necessary for the Company or any Participating Corporation, as applicable, to meet applicable withholding obligations, including up to the maximum permissible statutory rates and including any withholding required to make available to the Company or any Participating Corporation, as applicable, any tax deductions or benefits attributable to the sale or early disposition of shares of Common Stock by a Participant. The Company will not be required to issue any shares of Common Stock under the Plan until such obligations are satisfied.

10. **Limitations on Shares to be Purchased.**

(a) No Participant will be entitled to purchase stock under any Offering Period at a rate which, when aggregated with such Participant's rights to purchase stock under all other employee stock purchase plans of a Participating Company intended to meet the requirements of Section 423 of the Code, that are also outstanding in the same calendar year(s) (whether under other Offering Periods or other employee stock purchase plans of the Company, its Parent, and its Subsidiaries), exceeds $25,000 in Fair Market Value, determined as of the Offering Date (or such other limit as may be imposed by the Code) for each calendar year in which such Offering Period is in effect (the "***Maximum Share Amount***"). The Company may automatically suspend the payroll deductions of any Participant as necessary to enforce such limit provided that when the Company automatically resumes such payroll deductions, the Company must apply the rate in effect immediately prior to such suspension. Alternatively, in the Committee's discretion and to the extent permissible under applicable law, if the Company does not automatically suspend payroll deductions of any Participant as necessary to enforce such limit provided that when the Company, the Company shall refund any accumulated payroll deductions that may not be applied to the purchase of shares due to the applicable Maximum Share Amount as determined by Sections 10(a) and (b) with such refund occurring as soon as practicable following the applicable Purchase Date without interest (except to the extent required due to local legal requirements outside the United States).

(b) The Committee may, in its sole discretion, set a lower maximum number of shares which may be purchased by any Participant during any Offering Period than that determined under Section 10(a) above, which will then be the Maximum Share Amount for subsequent Offering Periods; provided, however, that in no event will a Participant be permitted to purchase more than Three Thousand (3,000) shares during any one Purchase Period or such greater or lesser number as the Committee may determine, irrespective of the Maximum Share Amount set forth in (a) and (b) hereof. If a new Maximum Share Amount is set, then all Participants will be notified of such Maximum Share Amount prior to the commencement of the next Offering Period for which it is to be effective. The Maximum Share Amount will continue to apply with respect to all succeeding Offering Periods unless revised by the Committee as set forth above.

(c) If the number of shares to be purchased on a Purchase Date by all Participants exceeds the number of shares then available for issuance under this Plan, then the Company will make a pro rata allocation of the remaining shares in as uniform a manner as will be reasonably practicable and as the Committee will determine to be equitable. In such event, the Company will give written notice of such reduction of the number of shares to be purchased under a Participant's option to each Participant affected.

(d) Any payroll deductions accumulated in a Participant's account which are not used to purchase stock due to the limitations in this Section 10, and not covered by Section 9(e), will be returned to the Participant as soon as administratively practicable after the end of the applicable Purchase Period, without interest (except to the extent required due to local legal requirements outside the United States).

11. **Withdrawal; Reset.**

(a) Each Participant may withdraw from an Offering Period under this Plan pursuant to a method specified by the Company. Such withdrawal may be elected at any time prior to the end of an Offering Period, or such other time period as specified by the Committee. The Committee may set forth a deadline of when a withdrawal must occur to be effective prior to a given Purchase Date in accordance with policies it may approve from time to time.

(b) Upon withdrawal from this Plan, the accumulated payroll deductions will be returned to the withdrawn Participant, without interest (except to the extent required by local legal requirements outside the United States), and his or her interest in this Plan will terminate. In the event a Participant voluntarily elects to withdraw from this Plan, he or she may not resume his or her participation in this Plan during

the same Offering Period, but he or she may participate in any Offering Period under this Plan which commences on a date subsequent to such withdrawal by filing a new authorization for payroll deductions in the same manner as set forth in Section 6 above for initial participation in this Plan.

(c) If and to the extent that the Committee determines in its sole discretion to apply this Section 11(c) to any Offering Period, then if the Fair Market Value on the Offering Date of the current Offering Period in which a Participant is enrolled is higher than the Fair Market Value on the Purchase Date of any applicable Purchase Period within such Offering Period, the Company will automatically withdraw the Participant from the current Offering Period and enroll such Participant in the subsequent Offering Period. Any funds accumulated in a Participant's account prior to the first day of such subsequent Offering Period will be applied to the purchase of shares on the Purchase Date preceding the first day of such subsequent Offering Period. Notwithstanding anything to the contrary in this Plan, this Section 11(c) shall only apply if its use is approved by the Committee.

12. **Termination of Employment**. Termination of a Participant's employment for any reason, including (but not limited to) retirement, death, disability, or the failure of a Participant to remain an eligible employee of the Company or of a Participating Corporation, or Participant's employer no longer being a Participating Corporation, immediately terminates his or her participation in this Plan (except to the extent required by local legal requirements outside the United States). In such event, accumulated payroll deductions credited to the Participant's account will be returned to him or her or, in the case of his or her death, to his or her legal representative, without interest (except to the extent required by local legal requirements outside the United States). For purposes of this Section 12, an employee will not be deemed to have ceased employment in the case of any leave of absence approved by the Company or as so provided pursuant to a formal policy adopted from time to time by the Company and issued and promulgated to employees in writing; provided that such leave is for a period of not more than ninety (90) days or reemployment upon the expiration of such leave is guaranteed by contract or statute. The Company will have sole discretion to determine whether a Participant has terminated employment and the effective date on which the Participant terminated employment, regardless of any notice period or garden leave required under local law.

13. **Return of Payroll Deductions.** In the event a Participant's interest in this Plan is terminated by withdrawal, termination of employment, or otherwise, or in the event this Plan is terminated by the Board, the Company will deliver to the Participant all accumulated payroll deductions credited to such Participant's account. No interest will accrue on the payroll deductions of a Participant in this Plan (except to the extent required by local legal requirements outside the United States).

14. **Capital Changes.** If the number of outstanding shares is changed by a stock dividend, recapitalization, stock split, reverse stock split, subdivision, combination, reclassification, or similar change in the capital structure of the Company, without consideration, then the Committee will adjust the number and class of Common Stock that may be delivered under the Plan, the Purchase Price, and the number of shares of Common Stock covered by each option under the Plan which has not yet been exercised, and the numerical limits of Sections 1 and 10 will be proportionately adjusted, subject to any required action by the Board or the stockholders of the Company and in compliance with applicable securities laws; provided that fractions of a share will not be issued.

15. **Nonassignability.** Neither payroll deductions credited to a Participant's account nor any rights with regard to the exercise of an option or to receive shares under this Plan may be assigned, transferred, pledged, or otherwise disposed of in any way (other than by will, pursuant to the laws of descent and distribution, or as provided in Section 22 below) by the Participant. Any such attempt at assignment, transfer, pledge, or other disposition will be void and without effect.

16. **Use of Participant Funds and Reports.** The Company may use all payroll deductions received or held by it under the Plan for any corporate purpose, and the Company will not be required to segregate Participant payroll deductions (except to the extent required due to local legal requirements outside the United States).

Until shares are issued, Participants will only have the rights of an unsecured creditor (except to the extent required by local legal requirements outside the United States). Each Participant will receive, or have access to, promptly after the end of each Purchase Period a report of his or her account setting forth the total payroll deductions accumulated, the number of shares purchased, the Purchase Price thereof, and the remaining cash balance, if any, carried forward or refunded, as determined by the Committee, to the next Purchase Period or Offering Period, as the case may be.

17. **Notice of Disposition.** If Participant is subject to tax in the United States, Participant will notify the Company in writing if the Participant disposes of any of the shares purchased in any Offering Period pursuant to this Plan. If such disposition occurs within two (2) years from the Offering Date or within one (1) year from the Purchase Date on which such shares were purchased, the Company may place a legend or legends on any certificate representing shares acquired pursuant to this Plan requesting the Company's transfer agent to notify the Company of any transfer of the shares. The obligation of the Participant to provide such notice will continue notwithstanding the placement of any such legend on the certificates.

18. **No Rights to Continued Employment.** Neither this Plan nor the grant of any option hereunder will confer any right on any employee to remain in the employ of the Company or any Participating Corporation, or restrict the right of the Company or any Participating Corporation to terminate such employee's employment.

19. **Equal Rights and Privileges.** All eligible employees granted an option under this Plan that is intended to meet the Code Section 423 requirements will have equal rights and privileges with respect to this Plan or within any separate offering under the Plan so that this Plan qualifies as an "employee stock purchase plan" within the meaning of Section 423 or any successor provision of the Code and the related regulations. Any provision of this Plan which is inconsistent with Section 423 or any successor provision of the Code will, without further act or amendment by the Company or the Committee, be reformed to comply with the requirements of Section 423 (unless such provision applies exclusively to options granted under the Plan that are not intended to comply with the Code Section 423 requirements). This Section 19 will take precedence over all other provisions in this Plan.

20. **Notices.** All notices or other communications by a Participant to the Company under or in connection with this Plan will be deemed to have been duly given when received in the form specified by the Company at the location, or by the person, designated by the Company for the receipt thereof.

21. **Term; Stockholder Approval.** This Plan originally became effective on September 27, 2010, the date on which the Registration Statement covering the initial public offering of the Company's Common Stock was declared effective by the Securities and Exchange Commission. The amendment and restatement of this Plan will become effective on the Effective Date. This Plan will be approved by the stockholders of the Company within twelve (12) months before or after the date this Plan is adopted by the Board. No purchase of shares that are subject to such stockholder approval before becoming available under this Plan will occur prior to stockholder approval of such shares, and the Committee may delay any Purchase Date and postpone the commencement of any Offering Period subsequent to such Purchase Date as deemed necessary or desirable to obtain such approval (provided that if a Purchase Date would occur more than twenty-four (24) months after commencement of the Offering Period to which it relates, then such Purchase Date will not occur, and instead such Offering Period will terminate without the purchase of such shares and Participants in such Offering Period will be refunded their contributions without interest, unless the payment of interest is required under local laws). This Plan will continue until the earlier to occur of (a) termination of this Plan by the Board (which termination may be effected by the Board at any time pursuant to Section 25 below), (b) issuance of all of the shares of Common Stock reserved for issuance under this Plan and (c) the tenth anniversary of the first Purchase Date occurring after the Effective Date.

22. **Designation of Beneficiary.**

(a) If provided in the subscription agreement, a Participant may file a written or electronic designation of a beneficiary who is to receive any shares and cash, if any, from the Participant's account under this Plan in the event of such Participant's death subsequent to the end of a Purchase Period but prior to delivery to him of such shares and cash. In addition, a Participant may file a written or electronic designation of a beneficiary who is to receive any cash from the Participant's account under this Plan in the event of such Participant's death prior to a Purchase Date. Such form will be valid only if it was filed with the Company and/or the Company's third party administrator at the prescribed location before the Participant's death.

(b) Such designation of beneficiary may be changed by the Participant at any time by written notice filed with the Company at the prescribed location before the Participant's death. In the event of the death of a Participant, and in the absence of a beneficiary validly designated under this Plan who is living at the time of such Participant's death, the Company will deliver such cash to the executor or administrator of the estate of the Participant, or if no such executor or administrator has been appointed (to the knowledge of the Company), the Company, in its discretion, may deliver such shares or cash to the spouse or, if no spouse is known to the Company, then to any one or more dependents or relatives of the Participant, or if no spouse, dependent or relative is known to the Company, then to such other person as the Company may designate.

23. **Conditions Upon Issuance of Shares; Limitation on Sale of Shares.** Shares will not be issued with respect to an option unless the exercise of such option and the issuance and delivery of such shares pursuant thereto will comply with all applicable provisions of law, domestic or foreign, including, without limitation, the Securities Act, the Exchange Act, the rules and regulations promulgated thereunder, and the requirements of any stock exchange or automated quotation system upon which the shares may then be listed, exchange control restrictions, securities law restrictions, or other applicable laws outside the United States, and will be further subject to the approval of counsel for the Company with respect to such compliance. Shares may be held in trust or subject to further restrictions as permitted by any subplan.

24. **Applicable Law.** The Plan will be governed by the substantive laws (excluding the conflict of laws rules) of the State of Delaware.

25. **Amendment or Termination.** The Committee, in its sole discretion, may amend, suspend, or terminate the Plan, or any part thereof, at any time and for any reason. If the Plan is terminated, the Committee, in its discretion, may elect to terminate all outstanding Offering Periods either immediately or upon completion of the purchase of shares of Common Stock on the next Purchase Date (which may be sooner than originally scheduled, if determined by the Committee in its discretion), or may elect to permit Offering Periods to expire in accordance with their terms (and subject to any adjustment pursuant to Section 14). If an Offering Period is terminated prior to its previously-scheduled expiration, all amounts then credited to Participants' accounts for such Offering Period, which have not been used to purchase shares of Common Stock, will be returned to those Participants (without interest thereon, except as otherwise required under local laws) as soon as administratively practicable. Further, the Committee will be entitled to establish rules to change the Purchase Periods and Offering Periods, limit the frequency and/or number of changes in the amount contributed during a Purchase Period or an Offering Period, provide that a Participant will be automatically withdrawn from the Offering Period in which Participant is then currently enrolled and enrolled in a subsequent Offer Period if Fair Market Value on the Purchase Date of such current Offering Period is lower than it was on the Offering Date of such current Offering Period, permit payroll withholding in excess of the amount designated by a Participant in order to adjust for delays or mistakes in the administration of the Plan, establish reasonable waiting and adjustment periods and/or accounting and crediting procedures to ensure that amounts applied toward the purchase of Common Stock for each Participant properly correspond with amounts contributed from the Participant's Compensation, and establish such other limitations or procedures as the Committee determines in its sole discretion advisable which are consistent with the Plan. Such actions will not require

stockholder approval or the consent of any Participants. However, no amendment will be made without approval of the stockholders of the Company (obtained in accordance with Section 21 above) within twelve (12) months of the adoption of such amendment (or earlier if required by Section 21) if such amendment would (a) increase the number of shares that may be issued under this Plan or (b) change the designation of the employees (or class of employees) eligible for participation in this Plan. In addition, in the event the Committee determines that the ongoing operation of the Plan may result in unfavorable financial accounting consequences, the Committee may, in its discretion and, to the extent necessary or desirable, modify, amend, or terminate the Plan to reduce or eliminate such accounting consequences including, but not limited to: (a) amending the definition of Compensation, including with respect to an Offering Period underway at the time; (b) altering the Purchase Price for any Offering Period including an Offering Period underway at the time of the change in Purchase Price; (c) shortening any Offering Period by setting a Purchase Date, including an Offering Period underway at the time of the Committee action; (d) reducing the maximum percentage of Compensation a Participant may elect to set aside as payroll deductions; and (e) reducing the maximum number of shares of Common Stock a Participant may purchase during any Offering Period. Such modifications or amendments will not require approval of the stockholders of the Company or the consent of any Participants.

26. **Corporate Transactions.** In the event of a Corporate Transaction (as defined below), each outstanding right to purchase Common Stock will be assumed or an equivalent option substituted by the successor corporation or a parent or a subsidiary of the successor corporation. In the event that the successor corporation refuses to assume or substitute for the purchase right, the Offering Period with respect to which such purchase right relates will be shortened by setting a new Purchase Date (the "***New Purchase Date***") and will end on the New Purchase Date. The New Purchase Date will occur on or prior to the consummation of the Corporate Transaction, and the Plan will terminate on the consummation of the Corporate Transaction.

27. **Definitions.**

(a) "***Affiliate***" means any entity, other than a Subsidiary or Parent, (i) that, directly or indirectly, is controlled by, controls or is under common control with, the Company and (ii) in which the Company has a significant equity interest, in either case as determined by the Committee, whether now or hereafter existing.

(b) "***Board***" means the Board of Directors of the Company.

(c) "***Code***" means the U.S. Internal Revenue Code of 1986, as amended.

(d) "***Common Stock***" means the common stock of the Company.

(e) "***Corporate Transaction***" means the occurrence of any of the following events: (i) any "person" (as such term is used in Sections 13(d) and 14(d) of the Exchange Act) becomes the "beneficial owner" (as defined in Rule 13d-3 of the Exchange Act), directly or indirectly, of securities of the Company representing fifty percent (50%) or more of the total voting power represented by the Company's then outstanding voting securities; (ii) the consummation of the sale or disposition by the Company of all or substantially all of the Company's assets; or (iii) the consummation of a merger or consolidation of the Company with any other corporation, other than a merger or consolidation which would result in the voting securities of the Company outstanding immediately prior thereto continuing to represent (either by remaining outstanding or by being converted into voting securities of the surviving entity or its parent) at least fifty percent (50%) of the total voting power represented by the voting securities of the Company or such surviving entity or its parent outstanding immediately after such merger or consolidation.

(f) "***Effective Date***" means the date this amendment and restatement is approved by the stockholders of the Company, which shall be within twelve (12) months of the approval of the Plan by the Board.

(g) "***ESPP Broker***" means a stock brokerage or other entity designated by the Company to establish accounts for stock purchased under the Plan by Participants.

(h) "***Exchange Act***" means the U.S. Securities Exchange Act of 1934, as amended.

(i) "***Fair Market Value***" means, as of any date, the value of a share of Common Stock, determined as follows:

i. if such Common Stock is publicly traded and is then listed on a national securities exchange, its closing price on the date of determination on the principal national securities exchange on which the Common Stock is listed or admitted to trading as reported in *The Wall Street* Journal or such other source as the Committee deems reliable;

ii. if such Common Stock is publicly traded but is neither listed nor admitted to trading on a national securities exchange, the average of the closing bid and asked prices on the date of determination as reported in *The Wall Street Journal* or such other source as the Committee deems reliable;

iii. if such Common Stock is publicly traded but is neither quoted on the Nasdaq Market nor listed or admitted to trading on a national securities exchange, the average of the closing bid and asked prices on the date of determination as reported in *The Wall Street Journal* or such other source as the Committee deems reliable; and

iv. if none of the foregoing is applicable, by the Committee in good faith.

(j) "***Offering Date***" means the first Trading Day of each Offering Period.

(k) "***Offering Period***" means a period with respect to which the right to purchase Common Stock may be granted under the Plan, as determined by the Committee pursuant to Section 5(a).

(l) "***Parent***" will have the same meaning as "parent corporation" in Sections 424(e) and 424(f) of the Code.

(m) "***Participant***" means an eligible employee who meets the eligibility requirements set forth in Section 4 and who elects to participate in this Plan, in each case subject and pursuant to Section 6.

(n) "***Participating Corporation***" means any Parent, Subsidiary or Affiliate that the Board designates from time to time as a corporation that will participate in this Plan.

(o) "***Plan***" means this Amyris, Inc. Amended and Restated 2010 Employee Stock Purchase Plan.

(p) "***Purchase Date***" means the last Trading Day of each Purchase Period.

(q) "***Purchase Period***" means a period during which contributions may be made toward the purchase of Common Stock under the Plan, as determined by the Committee pursuant to Section 5(b).

(r) "***Purchase Price***" means the price at which Participants may purchase a share of Common Stock under the Plan, as determined pursuant to Section 8.

(s) "***Securities Act***" means the U.S. Securities Act of 1933, as amended.

(t) "***Subsidiary***" will have the same meaning as "subsidiary corporation" in Sections 424(e) and 424(f) of the Code.

(u) "***Trading Day***" means a day on which the national stock exchange upon which the Common Stock is listed is open for trading.

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Appendix B — Certificate of Amendment of Restated Certificate of Incorporation

Amyris, Inc., a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware (the "***Corporation***"),

DOES HEREBY CERTIFY THE FOLLOWING:

FIRST: That the name of the Corporation is Amyris, Inc.

SECOND: That the date on which the Certificate of Incorporation of the Corporation was originally filed with the Secretary of State of Delaware is April 15, 2010 under the name Amyris Biotechnologies, Inc.

THIRD: That, at a meeting of the Board of Directors of the Corporation (the "***Board***"), the Board duly adopted resolutions setting forth the following proposed amendment of the Restated Certificate of Incorporation of the Corporation, as amended, declaring said amendment to be advisable and directing the Corporation to submit said amendment to the next annual meeting of the stockholders of said Corporation for consideration thereof, and that, thereafter, pursuant to such resolutions, the Corporation submitted the amendment to the stockholders of the Corporation at such annual meeting of the stockholders of the Corporation duly called and held upon notice in accordance with Section 222 of the Delaware General Corporation Law at which meeting the necessary number of shares as required by statute were voted in favor of said amendment:

Section 1 of Article IV of the Corporation's Restated Certificate of Incorporation is hereby amended to read in its entirety as follows:

> "1. Total Authorized. The total number of shares of all classes of stock that the corporation has authority to issue is Four Hundred Fifty-Five Million (455,000,000) shares, consisting of two classes: Four Hundred Fifty Million (450,000,000) shares of Common Stock, $0.0001 par value per share, and Five Million (5,000,000) shares of Preferred Stock, $0.0001 par value per share."

FOURTH: That said amendment was duly adopted in accordance with the provisions of Section 242 of the Delaware General Corporation Law.

IN WITNESS WHEREOF, the Corporation has caused this Certificate of Amendment of the Restated Certificate of Incorporation to be signed by its General Counsel and Secretary this day of May, 2021 and the foregoing facts stated herein are true and correct.

AMYRIS, INC.

By: _____
Name: Nicole Kelsey
Title: General Counsel and Secretary

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Reconciliations of Non-GAAP Financial Measures

To supplement our financial results and guidance presented in accordance with U.S. generally accepted accounting principles (GAAP), we use certain non-GAAP financial measures that we believe are helpful in understanding our financial results. These non-GAAP financial measures are among the factors management uses in planning and forecasting future periods. These non-GAAP financial measures also facilitate management's internal comparisons to Amyris's historical performance as well as comparisons to the operating results of other companies. Management believes these non-GAAP financial measures, when considered together with financial information prepared in accordance with GAAP, can enhance investors' and analysts' abilities to meaningfully compare our results from period to period, identify operating trends in our business, and track and model our financial performance. In addition, our management believes that these non-GAAP financial measures allow for greater transparency into the indicators used by management to understand and evaluate our business and make operating decisions.

Non-GAAP financial information is not prepared under a comprehensive set of accounting rules, and therefore, should only be read in conjunction with financial information reported under GAAP in order to understand Amyris's operating performance. A reconciliation of the non-GAAP financial measures to the most directly comparable GAAP financial measure, is provided below.

Adjusted EBITDA (In thousands)	**Year Ended December 31,**	
	2020	**2019**
GAAP net loss attributable to Amyris, Inc. common stockholders—Basic	$(382,311)	$(270,351)
Interest expense	47,951	58,665
Income taxes	293	629
Depreciation and amortization	7,223	4,581
Deemed dividend upon conversion of Series E preferred stock into common stock	67,151	—
Deemed dividend to preferred stockholder on issuance and modification of common stock warrants	—	34,964
Loss allocated to participating securities	(15,879)	(7,380)
EBITDA	(275,572)	(178,892)
Income attributable to noncontrolling interest	4,165	—
(Gain) loss from change in fair value of derivative instruments and debt, loss upon extinguishment of debt, other (income) expense, and loss from investment in affiliate	155,208	61,583
Inventory lower-of-cost-or-net realizable value adjustment	(1,182)	1,476
Stock-based compensation	13,743	12,554
Contract asset credit loss reserve	8,399	—
Adjusted EBITDA	$ (95,239)	$(103,279)

(In thousands)	Year Ended December 31, 2020	2019
Revenue (GAAP and non-GAAP)	$173,137	$152,557
Cost of products sold (GAAP)	$ 87,812	$ 76,185
Other costs/provisions	(10,128)	(5,895)
Inventory lower-of-cost-or-net realizable value adjustment	1,182	(1,476)
Excess capacity	(855)	(1,155)
Stock-based compensation expense	(112)	—
Depreciation and amortization	(1,239)	(753)
Cost of products sold (non-GAAP)	$ 76,660	$ 66,906
Adjusted gross profit (non-GAAP)	$ 96,477	$ 85,651
Gross margin %	56%	56%
Research and development expense (GAAP)	$ 71,676	$ 71,460
Stock-based compensation expense	(3,871)	(2,900)
Depreciation and amortization	(5,042)	(2,670)
Research and development expense (non-GAAP)	$ 62,763	$ 65,890
Sales, general and administrative expense (GAAP)	$137,071	$126,586
Stock-based compensation expense	(9,760)	(9,654)
Depreciation and amortization	(942)	(1,157)
Contract asset credit loss reserve	(8,399)	—
Sales, general and administrative expense (non-GAAP)	$117,970	$115,775
Cash operating expense	$180,733	$181,665

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

FORM 10-K

(Mark One)

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the fiscal year ended December 31, 2020

OR

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from ____ to ____

Commission File Number: 001-34885

AMYRIS, INC.

(Exact name of registrant as specified in its charter)

Delaware	**55-0856151**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)

5885 Hollis Street, Suite 100, Emeryville, California 94608
(Address of principal executive offices and Zip Code)

(510) 450-0761
(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, $0.0001 par value per share	**AMRS**	**The Nasdaq Stock Market LLC Nasdaq Global Select Market**

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 definitions of "large accelerated filer", "accelerated filer", "smaller reporting company", and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer ☐ Accelerated filer ☒ Non-accelerated filer ☐ Smaller reporting company ☒ Emerging growth company ☐

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

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

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

The aggregate market value of the registrant's common stock held by non-affiliates of the registrant as of June 30, 2020, the last business day of the registrant's most recently completed second fiscal quarter, was $516.7 million based upon the closing price of the registrant's common stock reported for such date on the Nasdaq Global Select Market.

Number of shares of the registrant's common stock outstanding as of February 28, 2021: 263,920,258

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's definitive proxy statement to be filed for its 2021 Annual Meeting of Stockholders are incorporated by reference into Part III hereof. Such proxy statement will be filed with the Securities and Exchange Commission within 120 days of the end of the fiscal year covered by this Annual Report on Form 10-K.

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AMYRIS, INC.

FORM 10-K
FOR THE YEAR ENDED DECEMBER 31, 2020

Forward-Looking Statements

This Annual Report on Form 10-K contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. All statements contained in this Annual Report on Form 10-K other than statements of historical fact, including any projections of financing needs, revenue, expenses, earnings or losses from operations, or other financial items; any statements of the plans, strategies and objectives of management for future operations; any statements concerning product research, development and commercialization plans and timelines; any statements regarding expected production capacities, volumes and costs; any statements regarding anticipated benefits of our products and expectations for commercial relationships; any other statements of expectation or belief; and any statements of assumptions underlying any of the foregoing, are forward-looking statements. The words "believe," "may," "will," "estimate," "continue," "anticipate," "predict," "intend," "expect," and similar expressions are intended to identify forward-looking statements, but are not the exclusive means of identifying such statements. We have based these forward-looking statements largely on our current expectations and projections about future events and trends that we believe may affect our financial condition, results of operations, business strategy, short-term and long-term business operations and objectives, and financial needs. These forward-looking statements are subject to a number of risks, uncertainties and assumptions, including those described in Part I, Item 1A, "Risk Factors" in this Annual Report on Form 10-K. Moreover, we operate in a very competitive and rapidly changing environment. New risks emerge from time to time. 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. In light of these risks, uncertainties and assumptions, the future events and trends discussed in this Annual Report on Form 10-K may not occur, and actual results could differ materially and adversely from those anticipated or implied in the forward-looking statements contained herein.

We undertake no obligation to revise or publicly release the results of any revision to these forward-looking statements, except as required by law. Given these risks and uncertainties, readers are cautioned not to place undue reliance on such forward-looking statements.

Unless expressly indicated or the context requires otherwise, the terms "Amyris," the "Company," "we," "us," and "our" in this Annual Report on Form 10-K refer to Amyris, Inc., a Delaware corporation, and, where appropriate, its consolidated entities.

Part I

Item 1. Business

Overview

As a leading synthetic biotechnology company active in the Clean Health and Beauty markets through our consumer brands and a top supplier of sustainable and natural ingredients, we apply our proprietary Lab-to-Market biotechnology platform to engineer, manufacture and market high performance, natural and sustainably sourced products. We do so with the use of computational tools, strain construction tools, screening and analytics tools, and advanced lab automation and data integration. Our biotechnology platform enables us to rapidly engineer microbes and use them as catalysts to metabolize renewable, plant-sourced sugars into high-value ingredients that we manufacture at industrial scale. Through the combination of our biotechnology platform and our industrial fermentation process, we have successfully developed, produced and commercialized thirteen distinct molecules used in formulations by thousands of leading global brands.

We believe that synthetic biology represents a third industrial revolution, bringing together biology and engineering to generate new, more sustainable materials to meet the growing global demand for bio-based replacements of petroleum-based and traditional animal- or plant-derived ingredients. We continue to generate demand for our current portfolio of products through an extensive go-to-market network provided by our partners that are the leading companies in our target markets. Via our partnership model, our partners invest in the development of molecules to take it from the lab to commercial scale and use their extensive marketing and sales capabilities to sell our ingredients and formulations to their customers. We capture long-term revenue both through the production and sale of our molecules to our partners and through royalty revenues from our partners' product sales to their customers. We have also successfully formulated our unique, natural and sustainably-sourced ingredients into wholly-owned consumer brands, including Biossance® our clean beauty skincare brand, Pipette®, our baby and mother care brand, and Purecane™, our alternative sweetener brand. We are marketing our brands directly to consumers via our ecommerce platforms, in brick-and-mortar stores, and online via various retail partners.

We were founded in 2003 in the San Francisco Bay area by a group of scientists from the University of California, Berkeley. Through a grant in 2005 from the Bill & Melinda Gates Foundation, we developed technology capable of creating microbial strains that produce artemisinic acid, a precursor of artemisinin, an anti-malarial drug.

We produced a renewable farnesene brand, Biofene®, a long-chain, branched hydrocarbon molecule that we manufacture through fermentation using engineered microbes. Our farnesene derivatives are sold in hundreds of products as nutraceuticals, skincare products, fragrances, solvents, polymers, and lubricant ingredients. In 2014, we began manufacturing additional molecules for the Flavor & Fragrance industry; in 2015, we began investing to expand our capabilities to other small molecule chemical classes via our collaboration with the Defense Advanced Research Projects Agency (DARPA); and in 2016, we expanded into proteins. We then made the strategic decision to transition our business model from low margin commodity markets to higher margin specialty ingredients markets. We began the transition by first commercializing and supplying farnesene-derived squalane as a cosmetic ingredient to formulators and distributors. We also entered into collaboration and supply agreements for the development and commercialization of molecules within the Flavor & Fragrance and Clean Beauty markets. We partner with our customers to create sustainable, high performing, low-cost molecules that replace an ingredient in their supply chains. We commercially scale and manufacture those molecules. Our revenue is generated from research and development collaboration programs, grants, renewable product sales, and license and royalty revenues from our renewable product portfolios.

All of our non-government partnerships include commercial terms for the supply of molecules we produce at commercial scale. The first molecule to generate revenue for us outside of farnesene was a fragrance molecule launched in 2015. Since the launch, this and additional fragrance molecules have continued to generate sales year over year. Our partners for these molecules are indicating continued strong growth due to their cost advantaged position, high purity of our molecules and our sustainable production method. In 2019, we commercially produced and shipped our Reb M product that is an alternative sweetener and sugar replacement for food and beverages. In 2020, we added a total of six new ingredients to our portfolio. We have a pipeline that can deliver an estimated two to three new molecules each year over the coming years.

Our time to market for molecules has decreased from seven years to less than a year for our most recent molecule, mainly due to our ability to leverage our biotechnology platform with proprietary computational tools, strain construction tools, screening and analytics tools, and advanced lab automation and data integration. Our state-of-the-art infrastructure includes industry-leading strain engineering and lab automation located in Emeryville, California, pilot-scale production facilities in Emeryville, California and Campinas, Brazil, a demonstration-scale facility in Campinas, Brazil and a commercial scale production facility in Leland, North Carolina (owned and operated by our Aprinnova joint venture). We are able to use a wide variety of feedstocks for production but have focused on sourcing Brazilian sugarcane for our large-scale production because of its renewability, low cost and relative price stability. We are constructing a new purpose-built, large-scale specialty ingredients facility in Brazil, which we anticipate will allow for the manufacture of up to five products concurrently, including both our specialty ingredients portfolio and our alternative sweetener product. In September 2019, we obtained the necessary permits and broke ground for this facility, and we expect construction to be completed by the end of 2021. During construction, we continue to manufacture our products at manufacturing sites in Brazil, the U.S. and Europe.

In 2017, we decided to monetize the use of one of our lower margin molecules, farnesene, in certain fields of use while retaining any associated royalties. We began discussions with our partners and ultimately made the decision to license farnesene to Koninklijke DSM N.V. (DSM) for use in these fields. We also sold to DSM our subsidiary Amyris Brasil Ltda. (Amyris Brasil), which owned and operated the purpose-built, large-scale manufacturing facility in Brotas, Brazil that manufactures farnesene, a key, bio-based intermediate ingredient in certain of our products.

The Brotas facility was built to batch manufacture one commodity product at a time (originally for high-volume production of biofuels, a business we have exited), which is not suited for the high margin specialty markets in which we operate today. We are in the process of constructing a new purpose-built, large-scale production facility in Brazil (see the Manufacturing section below). As part of the December 2017 sale of the Brotas facility, we contracted with DSM for the use of the Brotas facility to manufacture products to fulfill our product supply commitments to our customers until our new production facility becomes operational. In September 2019, we obtained the necessary permits and broke ground on our new Brazil plant. We expect facility construction to be completed by the end of 2021. During construction, we continue to manufacture our products at contract manufacturing sites in Brazil, the U.S. and Europe.

In the second quarter of 2018, we successfully demonstrated our industrial process at full-scale to produce a high-purity, zero calorie sweetener derived from sugarcane, and in December 2018, we received notification from the U.S. Food and Drug Administration (the FDA) that we received its "Generally Recognized As Safe" (GRAS) designation concurrence, and began producing commercial quantities of Steviol Glycoside Rebaudioside M (or Reb M) during the fourth quarter of 2018. When derived from the Stevia plant, Reb M is found in very limited quantities. The Reb M we produce from sugarcane is more sustainable and lower cost than other natural sweeteners and has a technical profile that we believe is advantaged in taste and total process economics for blends and formulations.

In the second quarter of 2018, we executed an agreement for a significant project consortium in Europe with the Universidade Católica Portuguesa (UCP) Porto Campus and AICEP Portugal Global (AICEP). UCP is a university

system, including the leading biotech school in Portugal, and operates 15 research centers. AICEP is an independent public entity of the Government of Portugal, focused in encouraging foreign companies to invest in Portugal. In conjunction with this agreement, we opened a subsidiary in Porto, Portugal with the primary purpose to conduct a research and development project together with Escola Superior de Biotecnologia o Universidade Católica Portuguese. This subsidiary is the second R&D center of Amyris and responsible for certain areas of research, namely valorization of fermentation residues and wastes and the advancement of the Company's Artificial Intelligence (AI) and Informatics platform. The overall multi-year project is valued up to approximately $50 million including investment funding and incentives allotted across the parties involved. We have sole responsibility for commercialization and majority ownership of all intellectual property (IP) generated. We believe this is the largest biotechnology grant ever awarded in Portugal and one of the largest ever approved by the AICEP for commercial applications.

In the third quarter of 2018, we entered into a license and collaboration agreement with a subsidiary of Yifan Pharmaceutical Co., Ltd. (Yifan), which is one of the leading Chinese pharmaceutical companies. Such license and collaboration agreement was expanded in November 2018 and again in December 2019.

In May 2019, we consummated a research, collaboration and license agreement (the Cannabinoid Agreement) with LAVVAN, Inc., a newly formed investment-backed company (Lavvan), for the development, manufacture and commercialization of cannabinoids. Under the agreement, the Company will perform research and development activities and Lavvan will be responsible for the commercialization of the cannabinoids developed under the agreement. The Cannabinoid Agreement funding is on a milestone basis, with the Company also entitled to receive certain supplementary research and development funding from Lavvan. The agreement provided aggregate funding of up to $300 million over the term of the Cannabinoid Agreement if all of the milestones are achieved. Additionally, the agreement provides for royalties to the Company on Lavvan's gross profit margin once products are commercialized. Consummation of the transactions contemplated by the Cannabinoid Agreement included the formation of a special purpose entity to hold certain intellectual property created during the collaboration (the Cannabinoid Collaboration IP), the licensing of certain Company intellectual property to Lavvan, the licensing of the Cannabinoid Collaboration IP to the Company and Lavvan, and the granting by the Company to Lavvan of a lien on our background intellectual property being licensed to Lavvan under the Cannabinoid Agreement, which would be subordinated to the lien on such intellectual property under the Foris LSA debt facility; see Note 4, "Debt" in Part II, Item 8 of this Annual Report on Form 10-K for more information. On September 10, 2020, Lavvan filed a suit against the Company in the United States District Court for the Southern District of New York alleging breach of contract, patent infringement, and trade secret misappropriation in connection with that certain Research, Collaboration and License Agreement between Lavvan and Amyris, dated March 18, 2019, as amended (Cannabinoid Agreement). Amyris filed motions to compel arbitration or to dismiss on October 2, 2020. On October 30, Lavvan filed its opposition to the motions and the Company filed its reply to such opposition on November 13, 2020. The Company believes the suit lacks merit and intends to continue to defend itself vigorously. Given the early stage of these proceedings, it is not yet possible to reliably determine any potential liability that could result therefrom. See Note 9, "Commitments and Contingencies" in Part II, Item 8 of this Annual Report on Form 10-K for more information.

Going Concern

The Company has incurred operating losses since its inception and expects to continue to incur losses and negative cash flows from operations over the course of at least the next 12 months following the issuance of our consolidated financial statements. As of December 31, 2020, the Company had negative working capital of $16.5 million (compared to negative working capital of $87.5 million as of December 31, 2019), and an accumulated deficit of $2.1 billion.

As of December 31, 2020, the Company's outstanding debt principal (including related party debt) totaled $170.5 million, of which $56.5 million is classified as current. The Company's debt agreements contain various covenants, including certain restrictions on the Company's business that could cause the Company to be at risk of defaults, such as restrictions on additional indebtedness, material adverse effect and cross default provisions. A failure to comply with the covenants and other provisions of the Company's debt instruments, including any failure to make a payment when required, would generally result in events of default under such instruments, which could permit acceleration of a substantial portion of such indebtedness. If such indebtedness is accelerated, it would generally also constitute an event of default under the Company's other outstanding indebtedness, permitting acceleration of a substantial portion of such other outstanding indebtedness. Throughout the first half of 2020, the Company failed to meet certain covenants under several credit arrangements, including those associated with cross-default provisions, minimum liquidity and minimum asset coverage requirements and certain scheduled payments. Most of these lenders provided waivers to the Company for breaches of all past covenant violations and cross-default payment failures, under the respective credit agreements or extended payment deadlines through May 31, 2020.

Beginning in May 2020 and continuing through June 2020, the Company executed a series of financial transactions for general corporate purposes, including debt servicing payments. On May 1, 2020, the Company amended the Senior Convertible Notes to eliminate the monthly amortization payments and change the interest payment frequency from monthly to quarterly. On June 1, 2020, the Company amended the Foris LSA to eliminate the quarterly principal payments and defer all interest payments until maturity on July 1, 2022, and to provide for the conversion of all outstanding indebtedness under the LSA at a $3.00 per share conversion price, which conversion was approved by the Company's stockholders on August 14, 2020. Further, on June 1, 2020 and June 4, 2020, the Company entered into securities purchase agreements with investors for the private placement of an aggregate of $200 million of common and preferred stock, resulting in the Company receiving approximately $190 million of net proceeds. A portion of the proceeds from the offering was used to pay down approximately $37.1 million of debt principal and $6.1 million of accrued interest. Also, on June 2, 2020, Total Raffinage Chimie (Total) converted approximately $9.3 million of debt principal and accrued interest into common stock under the terms of the 2014 Rule 144A Convertible Note, further reducing the Company's outstanding indebtedness. On August 10, 2020, the Company and Ginkgo Bioworks, Inc. (Ginkgo) entered into a Second Amendment to Promissory Note and Partnership Agreement to reduce the frequency of partnership payments from monthly to quarterly, in an aggregate amount of $2.1 million, and to defer an aggregate of $9.8 million in partnership payments to the end of the agreement in October 2022. See Note 4, "Debt" for more information. As a result of closing the equity offering, making past due payments, converting the $9.1 million 2014 Rule 144A Convertible Note principal into equity, and executing amendments to the Foris LSA, the Senior Convertible Notes, and the Ginkgo Note, the Company cured all payment defaults and other events of default, including cross-defaults under the Company's various debt instruments as of December 31, 2020.

Further, the Company's cash and cash equivalents of $30.2 million as of December 31, 2020 is not expected to be sufficient to fund expected cash flow requirements from operations and cash debt service obligations through March 2022. The Company has previously announced strategic transactions which are expected to generate substantial cash during 2021 and beyond. Solely based on cash from operations, there is doubt about the Company's ability to continue as a going concern within one year after the date our consolidated financial statements are issued. The consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty. The Company's ability to continue as a going concern will depend, in large part, on its ability to eliminate or minimize the anticipated negative cash flows from operations during the 12 months from the date of this filing and to either raise additional cash proceeds through strategic transactions, financings or refinance the debt maturities occurring in June 2021 ($10 million as of the date of this filing), all of which are uncertain and outside the control of the Company. Further, the Company's operating plan for the next 12 months contemplates (i) revenue growth from sales of existing and new products with positive gross margins, (ii) reduced production costs as a result of manufacturing and technical developments, (iii) the monetization of

certain assets, (iv) continued cash inflows from collaboration and grants and licenses and royalties and (v) lower debt servicing expense. If the Company is unable to complete these actions, it may be unable to meet its operating cash flow needs and its obligations under its existing debt facilities over the next 12 months. This could result in an acceleration of its obligation to repay all amounts outstanding under those facilities, and the Company may be forced to obtain additional equity or debt financing, which may not occur timely or on reasonable terms, if at all, and/or liquidate its assets.

Technology

We have developed innovative microbial engineering and screening technologies that allow us to transform the way microbes metabolize sugars. Specifically, we engineer microbes, such as yeast, and use them as catalysts to convert sugar, through fermentation, into high-value molecules. In 2015, we were awarded a technology investment agreement with DARPA to expand the capabilities of our technology platform. The investment has resulted in accelerating the integration of our platform with artificial intelligence that will speed up the development and commercialization of small molecules across 15 different chemical classes. We have also developed our technology to be able to produce large molecules, such as proteins.

We devote substantial resources to our research and development efforts. We have invested more than $750 million to date in our research and development capabilities that has resulted in an almost 6x improvement in speed to market and in the scale-up of nine successful molecules. These achievements are due to the leading strain engineering and upscaling and commercialization capabilities we have developed from our investment.

Strain Engineering

Companies and researchers around the world are continuously learning how the complex biological processes in organisms work. Because there is so much that is still unknown, the best method for development of commercially viable strains is to test as many hypotheses as accurately and quickly as possible to accelerate the learning curve.

We have developed a high-throughput strain engineering system that is currently capable of producing and screening more than 600,000 yeast strain candidates per month, which enables us to achieve an approximately 90% lower cost per strain than we achieved in 2009. We generated more than 520,000 unique strains in 2020, and over 8.3 million unique strains since our inception, with each strain testing for improved production of the target molecules. In addition, through our lab-scale and pilot-plant fermentation operations, and our proprietary analytical tools, we are now able to predict, with high reliability, the performance of candidate strains at industrial scale.

Upscaling and Commercialization

The most challenging parts of commercializing biotechnology are often the scale up and manufacturing phases due to the unpredictability of biotechnology at different scales. We have built scale-up and manufacturing capabilities to our advantage by heavily investing in prediction models and analytics to quickly ascertain how a strain's behavior at one scale will translate to another scale. We have successfully scaled-up and commercially manufactured thirteen distinct molecules used by thousands of leading global brands. Our capabilities advantage results in accelerated speed to market, lower overall development costs, and a significantly lower risk profile for any project we undertake.

A strain must be improved to increase the level of efficiency of production and tested for performance in pilot-scale facilities before it is implemented at commercial scale manufacturing facilities. Our unique infrastructure to support this scale-up process includes lab-scale fermentors (0.25 to 2 liter), operating pilot plants in our facilities in Emeryville, California, which operates a 1000-liter and multiple 300-liter fermentors, and Campinas, Brazil, which

operates 300- and 2,000-liter fermentors, and five years' experience owning and operating the 1,200,000-liter production facility in Brotas, Brazil that we sold in late 2017. Each of these stages mimic the conditions found in larger-scale fermentation so that our findings may translate predictably from lab-scale to pilot and ultimately to commercial scale.

We have developed a world-class manufacturing team which has successfully brought online a production facility and scaled up and manufactured molecules at commercial scale that are currently used in thousands of consumer goods products around the world. Our effort also expands into continued strain and process improvements to ensure our manufacturing is robust and cost advantaged.

Product Markets and Partnerships

There are three market areas that are our primary focus and key to our growth: Health & Wellness, Clean Beauty and Flavor & Fragrance. Each of these markets embodies our core competencies of sustainably providing clean ingredients in markets where we can be the most impactful, not just from a growth and revenue standpoint, but also for healthier living.

We believe that our leadership in biotechnology is demonstrated by collaboration partners, who come to us to access our platform and industrial fermentation expertise. Together we seek to reduce environmental impact, enhance performance, reduce supply and price volatility, and improve product cost. Our partners include Flavor & Fragrance companies such as Firmenich S.A. (Firmenich) and Givaudan International, SA (Givaudan), and nutrition companies such as DSM and Yifan. A portion of our work has also been funded by the U.S. government, including the Department of Energy (DOE) and DARPA, to develop technologies and processes capable of improving the ability to utilize biotechnology for the production of a broader range of molecules.

Health & Wellness

Our Health & Wellness focus includes alternative sweeteners, nutraceuticals, such as vitamins, and food ingredients. As consumers continue to demand higher nutritional performance, healthier ingredients and convenience from their food, the demand will continue to grow for specific ingredients that are often difficult and expensive to procure. Animal farming is also being impacted by the growing demand for protein and the need to change farming practices, such as reducing antibiotic use. Our technology can be employed to provide affordable access to these desired ingredients for both human and animal health. To date, product revenue in this area has been from a derivative made from our Biofene® product by our partner. During 2015, we announced the signings of our first ingredient supply agreement and collaboration agreement for the global nutraceuticals market. Under the supply agreement, we sourced Biofene to our partner, which was then further processed into a nutraceutical product. In 2016, we made the first large-scale shipments of Biofene to our partner, who successfully produced and sold a nutraceutical product to its customers. In 2017 and 2018, we expanded our collaborations in nutraceuticals to four vitamins and a human nutrition ingredient.

In late 2018, we began to produce at commercial scale an alternative, healthier sweetener. We introduced this ingredient, our Reb M product, to the public in December 2018. In 2019, we ran two production campaigns that resulted in feedback that our Reb M product is distinguished by one of the best-tasting profiles in the industry to date. We sold out the production from our campaigns. By the end of 2019 we also introduced our direct-to-consumer sweetener brand: Purecane. We currently offer Purecane for table-top and culinary applications through our own website: www.purecane.com and on Amazon.

Flavor & Fragrance Markets

Our technology enables us to cost-effectively produce natural oils and aroma chemicals that are commonly used in the Flavor & Fragrance market. Many of the natural ingredients used in the Flavor & Fragrance market are

expensive due to limited supply and the synthetic alternatives requiring complex chemical conversions. We offer Flavor & Fragrance companies a natural route to procure these high-value ingredients without sacrificing cost or quality. To date, we have successfully brought multiple Flavor & Fragrance ingredients to market with our collaboration partners. We also have several other ingredients under development.

In 2014, we completed the first production campaign for our first Flavor & Fragrance ingredient for a range of applications, from perfumes to laundry detergent, which is marketed by a collaboration partner and global Flavor & Fragrance leader. In late 2015, we commenced production of our second Flavor & Fragrance ingredient to the same collaboration partner. During 2019, we added two new Flavor & Fragrance molecules to our list of successfully scaled products, and we shipped seven compounds destined for the Flavor & Fragrance market (including compounds converted by our partners to Flavor & Fragrance ingredients) to our partners. Finally, in 2020 we introduced our tenth ingredient, a leading natural flavor, and completed successful production campaigns in the third quarter.

We continue to work to develop and commercialize a variety of Flavor & Fragrance ingredients that are either direct fermentation products or derivatives of fermentation products.

Clean Beauty

Our Clean Beauty focus includes clean skincare and cosmetic ingredients we develop and commercialize with our partners and our branded Biossance skincare and Pipette baby and mother care product lines. We have several cosmetic ingredients currently under development and plan to launch four additional brands in 2021. Our Biossance and Pipette products are discussed further in the *Amyris-branded Product Markets* section below.

Amyris-branded Product Markets

Through basic chemical finishing steps, we are able to convert our farnesene into squalane, which is used today as a premium emollient in clean skincare products. We believe that our squalane offers performance attributes equal or superior to those of squalane derived from conventional sources. The ingredient traditionally has been manufactured from olive oil or extracted from deep-sea shark liver oil, which requires that the shark be killed in order to harvest its liver oil. The relatively high price and unstable supply of squalane in the past meant that its use was generally limited to luxury products or small quantities in mass-market product formulations. With our ability to produce a reliable supply of low-cost squalane that eliminates the need to harvest shark liver oil, we offer this ingredient at a price that we believe will drive adoption by formulators. In addition to squalane, we offer a second, lower-cost cosmetic ingredient, hemisqualane, for the cosmetics market. Our joint venture with Nikko Chemicals Co., Ltd. (Nikko) currently has supply agreements with several regional distributors, including those with locations in Japan, South Korea, Europe, Brazil and North America, and, in some cases, directly with cosmetics formulators, which we transferred to the joint venture during the formation process. See below under "Joint Venture" for more information regarding our Aprinnova joint venture.

Our consumer clean skincare products, sold under our Biossance brand, feature our Biofene-derived squalane. Under our Biossance brand, we market and sell our products directly to retailers and consumers. Biossance was initially sold solely through our ecommerce branded website. In February 2017, we launched a full squalane-based consumer cosmetic line at participating Sephora stores and Sephora online. All of the products are based on our commitment to No Compromise®. Since the launch of Biossance, sales have grown, and with Sephora's partnership, we continued to expand to more stores through 2020.

We launched a clean beauty brand, Pipette, in September 2019 with an initial offering of seven products developed for babies and moms to support and nurture the skin. Currently, the brand offers nine unique products.

Pipette is available for purchase at Pipettebaby.com, buybuyBABY.com, Amazon.com, Target.com, Walmart.com, and Dermstore.com, in-store exclusively at buybuy BABY® stores nationwide, and at our own direct website. The brand is seeking further expansion through online and brick-and-mortar retailers.

Manufacturing

Until December 2017, we owned and operated a purpose-built, large-scale production facility located in Brotas, Brazil. In December 2017, we sold the facility to a unit of DSM and entered into a supply agreement with DSM for us to purchase output from the facility.

In September 2019, we obtained the necessary permits and broke ground on a new Brazil plant. We expect facility construction to be completed by the end of 2021 with production commencing during the first quarter of 2022. This facility will allow us to manufacture up to five products concurrently, including both our specialty ingredients portfolio and our alternative sweetener product. During construction, we are manufacturing our products at contract manufacturing sites in Brazil, the U.S. and Europe.

For many of our products, we perform additional distillation or chemical finishing steps to convert initial target molecules into other finished products, such as renewable squalane. We have agreements with several facilities in the U.S. and Brazil to perform these downstream steps for such products. We also have a manufacturing facility in Leland, North Carolina through Aprinnova, our joint venture with Nikko, to convert our Biofene into squalane and other final products. See below under "Joint Venture" for more information regarding our Aprinnova joint venture.

Joint Venture

Aprinnova, LLC

In December 2016, Amyris, Nikko Chemicals Co., Ltd., an existing commercial partner of the Company, and Nippon Surfactant Industries Co., Ltd., an affiliate of Nikko (collectively, Nikko) entered into a joint venture agreement to focus on the worldwide commercialization of the Neossance cosmetic ingredients business. Amyris formed the joint venture under the name Neossance, LLC, and later changed the name to Aprinnova, LLC (the "Aprinnova JV"), which is jointly owned by Amyris and Nikko. Pursuant to the joint venture agreement, Amyris contributed certain assets to the Aprinnova JV, including certain intellectual property and other commercial assets relating to the Neossance cosmetic ingredients business, as well as the production facility in Leland, North Carolina and related assets purchased by Amyris from Glycotech in December 2016. Amyris also agreed to provide the Aprinnova JV with licenses to certain intellectual property necessary to make and sell products associated with the Neossance business. At the closing of the formation of the joint venture, Nikko purchased a 50% interest in the Aprinnova JV in exchange for an initial payment to Amyris of $10.0 million and payment to Amyris of any profits distributed in cash to Nikko from the Aprinnova JV for the three year period beginning January 1, 2017, up to a maximum of $10.0 million. In addition, as part of the formation of the Aprinnova JV, Amyris and Nikko agreed to make certain working capital loans to the Aprinnova JV and executed a supply agreement to supply farnesene to the Aprinnova JV. Amyris also agreed to purchase product from the Aprinnova JV, to transfer all of Amyris customers buying the Aprinnova JV products to the Aprinnova JV, to guarantee a maximum production cost for certain Aprinnova JV products and take on the cost of production above certain guaranteed costs.

Product Distribution and Sales

We distribute and sell our ingredients products directly to distributors, formulators, collaboration partners, or through joint ventures, depending on the end-market. We also distribute and sell our Amyris-branded consumer products directly to retailers and consumers through on-line ecommerce web-sites. Generally, our collaboration agreements include commercial terms, and sales are contingent upon achievement of technical and commercial milestones.

For the year ended December 31, 2020, revenue from key customers and from all other customers was as follows:

(In thousands)	Renewable Products	Licenses and Royalties	Grants and Collaborations	Total Revenue	% of Total Revenue
DSM (related party)	$ 946	$43,750	$ 7,018	$ 51,714	29.9%
Firmenich	9,967	7,241	594	17,802	10.3%
All other customers	93,425	—	10,196	103,621	59.8%
Total revenue	$104,338	$50,991	$17,808	$173,137	100.0%

Intellectual Property

Our success depends in large part upon our ability to obtain and maintain proprietary protection for our products and technologies, and to operate without infringing on the proprietary rights of others. We seek to avoid the latter by monitoring patents and publications in our product areas and technologies to be aware of developments that may affect our business, and to the extent we identify such developments, evaluate and take appropriate courses of action. With respect to the former, our policy is to protect our proprietary position by, among other methods, filing for patent applications on inventions that are important to the development and conduct of our business with the U.S. Patent and Trademark Office (the USPTO), and its foreign counterparts.

As of December 31, 2020, we had 695 issued U.S. and foreign patents and 220 pending U.S. and foreign patent applications that are owned or co-owned by or licensed to us. We also use other forms of protection (such as trademark, copyright, and trade secret) to protect our intellectual property, particularly where we do not believe patent protection is appropriate or obtainable. We aim to take advantage of all of the intellectual property rights that are available to us and believe that this comprehensive approach provides us with a strong proprietary position.

Patents extend for varying periods according to the date of patent filing or grant and the legal term of patents in various countries where patent protection is obtained. The actual protection afforded by patents, which can vary from country to country, depends on the type of patent, the scope of its coverage and the availability of legal remedies in the country. See "*Risk Factors - Risks Related to Our Business - Our proprietary rights may not adequately protect our technologies and product candidates.*"

We also protect our proprietary information by requiring our employees, consultants, contractors and other advisers to execute nondisclosure and assignment of invention agreements upon commencement of their respective employment or engagement. Agreements with our employees also prevent them from bringing the proprietary rights of third parties to us. In addition, we also require confidentiality or material transfer agreements from third parties that receive our confidential data or materials.

Trademarks

Amyris, the Amyris logo, Biofene, Biossance, Pipette, Purecane and No Compromise are trademarks or registered trademarks of Amyris, Inc or its subsidiaries. This report also contains trademarks and trade names of other businesses that are the property of their respective holders.

Competition

We expect that our renewable products will compete with products produced from traditional sources as well as from alternative production methods (including the intellectual property underlying such methods) that established enterprises and new companies are seeking to develop and commercialize.

Health & Wellness

Many active ingredients in the nutraceutical market are made via chemical synthesis by suppliers that have a deep chemistry know-how and production facilities, including ingredient suppliers. We may compete directly with these companies with respect to specific ingredients or attempt to provide customers with a natural alternative that is more cost effective or higher performing than those derived from chemistry. For food ingredients, we also compete with companies that produce products from plant- and animal-derived sources as well as with companies that are also developing biotechnology production solutions to produce specific molecules.

Flavor & Fragrance

The main competition in the Flavor & Fragrance and cosmetic actives markets is from products derived from plant and animal sources as well as chemical synthesis. The products derived from plant and animal sources are typically produced at a higher cost, lower purity and create a greater impact on the environment compared to our products. Products derived from chemical synthesis are often produced at a low cost but may have ramifications on sustainability and on non-natural sourcing. There are also companies that are working to develop products using similar technology to us.

Clean Beauty

We develop and sell active cosmetic ingredients and consumer products in the Clean Beauty market, creating a competitive landscape that includes ingredient suppliers as well as consumer goods companies, such as Procter & Gamble and Estee Lauder. Most skincare ingredients are derived from plant and animal sources or created using chemical synthesis. Plant- and animal-sourced ingredients are typically higher in cost, lower in purity and have a greater impact on the environment versus our products. Products derived from chemical synthesis are often produced at a low cost but have ramifications on sustainability as well as non-natural sourcing. There are also companies that are working to develop products using similar technology to us.

Competitive Factors

We believe the primary competitive factors in our target markets are:

- product performance and other measures of quality;
- product price;
- product cost;
- sustainability and social responsibility;
- dependability of naturally supplied ingredients; and
- infrastructure compatibility of products.

We believe that, for our products to succeed in the market, we must demonstrate that our products are comparable or better alternatives to existing products and to any alternative products that are being developed for the same markets based on some combination of product cost, pricing, availability, performance, and consumer preference characteristics.

Regulatory Matters

Environmental Regulations

Our development and production processes involve the use, generation, handling, storage, transportation and disposal of hazardous chemicals and radioactive and biological materials. We are subject to a variety of federal, state, local and international laws, regulations and permit requirements governing the use, generation, manufacture,

transportation, storage, handling and disposal of these materials in the United States, Brazil, Europe, China and other countries where we operate or may operate or sell our products in the future. These laws, regulations and permits can require expensive fees, pollution control equipment or operational changes to limit actual or potential impact of our technology on the environment and violation of these laws could result in significant fines, civil sanctions, permit revocation or costs from environmental remediation. We believe we are currently in substantial compliance with applicable environmental regulations and permitting. However, future developments including the commencement of or changes in the processes relating to commercial manufacturing of one or more of our products, more stringent environmental regulation, policies and enforcement, the implementation of new laws and regulations or the discovery of unknown environmental conditions may require expenditures that could have a material adverse effect on our business, results of operations or financial condition. See "*Risk Factors - Risks Relating to Our Business - We may incur significant costs to comply with environmental laws and regulations, and failure to comply with these laws and regulations could expose us to significant liabilities*."

GMM Regulations

The use of genetically modified microorganisms (GMMs), such as our yeast strains, is subject to laws and regulations in many countries. In the United States, the Environmental Protection Agency (EPA) regulates the commercial use of GMMs as well as potential industrial products produced from the GMMs. Various states within the United States could choose to regulate products made with GMMs as well. While the strain of genetically modified yeast that we use, S. cerevisiae, is eligible for exemption from EPA review because it is generally recognized as safe, we must satisfy certain criteria to achieve this exemption, including but not limited to, use of compliant containment structures and safety procedures. In Brazil, GMMs are regulated by the National Biosafety Technical Commission (CTNBio) under its Biosafety Law No. 11.105-2005. We have obtained commercial approvals from CTNBio to use our GMMs in a contained environment in our Brazil facilities for research and development purposes, in manufacturing and at contract manufacturing facilities in Brazil. In Europe, we are subject to similar regulations and have obtained approvals from the Ministry of Environment, Spain for production activities.

We expect to encounter GMM regulations in most if not all of the countries in which we may seek to make our products; however, the scope and nature of these regulations will likely vary from country to country. In addition, such regulations may change over time. If we cannot meet the applicable requirements in countries in which we intend to produce our products using our yeast strains, then our business will be adversely affected. See "*Risk Factors - Risks Related to Our Business - Our use of genetically modified feedstocks and yeast strains to produce our products subjects us to risks of regulatory limitations and rejection of our products*."

Chemical Regulations

Our renewable products may be subject to government regulations in our target markets. In the United States, the EPA administers the requirements of the Toxic Substances Control Act (TSCA), which regulates the commercial registration, distribution and use of many chemicals. Before an entity can manufacture or distribute significant volumes of a chemical, it needs to determine whether that chemical is listed in the TSCA inventory. If the substance is listed, then manufacture or distribution can commence immediately. If not, then in most cases a "Chemical Abstracts Service" number registration and pre-manufacture notice must be filed with the EPA, which has 90 days to review the filing. A similar requirement exists in Europe under the Registration, Evaluation, Authorization and Restriction of Chemical Substances (REACH) regulation. See "*Risk Factors - Risks Related to Our Business - We may not be able to obtain regulatory approval for the sale of our renewable products*." In 2013, the EPA registered farnesane as a new chemical substance under the TSCA, which enables us to manufacture and sell Hemisqualane™ (Farnesane) without restriction in the United States.

Other Regulations

Certain of our current or emerging products in the Health & Wellness, Clean Beauty, and Flavor & Fragrance markets, including alternative sweeteners, nutraceuticals, Flavor & Fragrance ingredients, skincare ingredients, cosmetic actives, and our proposed cannabinoid products, are subject to regulation by either the FDA or the Drug Enforcement Administration (DEA) or both, as well as similar agencies of states and foreign jurisdictions where these products are manufactured, sold or proposed to be sold. Pursuant to the Federal Food, Drug, and Cosmetic Act (the FDCA), the FDA regulates the processing, formulation, safety, manufacture, packaging, labeling and distribution of food ingredients, vitamins, and cosmetics. Generally, in order to be marketed and sold in the United States, a relevant product must be generally recognized as safe, approved and not adulterated or misbranded under the FDCA and relevant regulations issued thereunder. The FDA has broad authority to enforce the provisions of the FDCA applicable to food ingredients, vitamins, drugs and cosmetics, including powers to issue a public warning letter to a company, to publicize information about illegal products, to request a recall of illegal products from the market, and to request the United States Department of Justice to initiate a seizure action, an injunction action, or a criminal prosecution in the U. S. courts. Failure to obtain requisite approval from, or comply with the laws and regulations of, the FDA or similar agencies of states and applicable foreign jurisdictions could prevent us from fully commercializing certain of our products. See "*Risk Factors - Risks Related to Our Business - We may not be able to obtain regulatory approval for the sale of our renewable products*." Our proposed cannabinoid products may also be subject to regulation under various federal, state and foreign-controlled substance laws and regulations. See "*Risk Factors - Our cannabinoid initiative is uncertain and may not yield commercial results and is subject to significant regulatory risks*."

In addition, our end-user products such as our Biossance and Pipette brands clean skincare products will be subject to the Natural Cosmetics/Personal Care Products Safety Act, if enacted. Cosmetic products are regulated by or under the FDA's oversight. Also, our end-user products are subject to the regulations of the United States Federal Trade Commission (FTC) and similar agencies of states and foreign jurisdictions where these products are sold or proposed to be sold regarding the advertising of such products. In recent years, the FTC has instituted numerous enforcement actions against companies for failure to have adequate substantiation for claims made in advertising or for the use of false or misleading advertising claims. The FTC has broad authority to enforce its laws and regulations applicable to cosmetics, including the ability to institute enforcement actions which often result in consent decrees, injunctions, and the payment of civil penalties by the companies involved. Failure to comply with the laws and regulations of the FTC or similar agencies of states and applicable foreign jurisdictions could impair our ability to market our end-user products.

Human Capital

As of December 31, 2020, we had 595 full-time employees, of whom 471 were in the United States, 122 were in Brazil and 2 were in Portugal. Except for labor union representation for Brazil-based employees based on labor code requirements in Brazil, none of our employees is represented by a labor union or is covered by a collective bargaining agreement. We have never experienced any employment-related work stoppages, and we consider relations with our employees to be good. Our human capital resources objectives include, as applicable, identifying, recruiting, retaining, incentivizing and integrating our existing and additional employees. The principal purposes of our equity incentive plans are to attract, retain and motivate selected employees, consultants and directors through the granting of stock-based compensation awards and cash-based performance bonus awards.

Corporate Information

We were originally incorporated in California in 2003 under the name Amyris Biotechnologies, Inc. and then reincorporated in Delaware in 2010 and changed our name to Amyris, Inc. Our principal executive offices are located at 5885 Hollis Street, Suite 100, Emeryville, California 94608, and our telephone number is (510) 450-0761. Our common stock is listed on The Nasdaq Global Select Market under the symbol "AMRS".

Available Information

Our website address is www.amyris.com. Our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, and other reports filed pursuant to Sections 13(a) and 15(d) of the Securities Exchange Act of 1934 (the Exchange Act), as well as amendments thereto, are filed with the U.S. Securities and Exchange Commission (the SEC) and are available free of charge on our website at investors.amyris.com promptly after such reports are available on the SEC's website. We may use our investors.amyris.com website as a means of disclosing material non-public information and complying with our disclosure obligations under Regulation FD.

The SEC maintains an Internet site that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC at www.sec.gov.

The information contained in or accessible through our website or contained on other websites is not incorporated into this filing. Further, any references to URLs contained in this report are intended to be inactive textual references only.

Item 1A. Risk Factors

Risk Factors Summary

Our business faces material risks. In addition to this summary below, you should carefully review the risk factors enumerated in the "Risk Factors" section immediately following this "Risk Factors Summary" section. We may be subject to additional risks and uncertainties not presently known to us or that we currently deem immaterial. Our business, financial condition, results of operations and growth prospects could be materially adversely affected by any of these risks, and the trading price of our common stock could decline by virtue of these risks.

Business and Operational Risks

- The impact of the COVID-19 pandemic on our business and operations;
- Our ability to scale and manage operations;
- Our reliance on contract manufacturers to meet our production and delivery goals;
- Our ability to manage the expansion of our international operations;
- Our ability to generate revenue through existing and future customers, distributors and collaboration partners;
- Our reliance on collaboration arrangements to fund development and commercialization of our products; and
- Our ability to compete effectively.

Financial Risks

- Our ability to design and maintain effective internal controls;
- Our ability to generate sufficient cash to fund operations and service our debt;
- Our ability to manage current, or our need to incur future, indebtedness which could impair our flexibility to pursue certain transactions and our ability to operate our business, as well as restrict access to additional capital;
- Our ability to achieve or sustain profitability given our history of net losses; and
- Variability of future financial results.

Regulatory, Intellectual Property, and Legal Risks

- Regulatory risks relating to our use of genetically modified feedstocks and yeast strains to produce our products;
- New regulation or changes in regulation relating to our existing or future products, as well as any costs incurred to comply with applicable regulations;
- Our ability to obtain, maintain, protect and enforce our intellectual property rights; and
- Costs and resources required to manage litigation related to the development and commercialization of our products.

Risks Related to the Ownership of Our Common Stock

- Volatility of our stock price;
- The composition of our capital stock ownership with relevant insiders; and
- Changes in government regulation relating to purchases of our common stock.

Risk Factors

Investing in our common stock involves risk. You should carefully consider the risks and uncertainties described below, together with all of the other information set forth in this Annual Report on Form 10-K, including the consolidated financial statements and related notes, which could materially affect our business, financial condition, results of operations, or growth prospects. If any of the following risks actually occurs, our business, financial condition, results of operations, and growth prospects could be materially and adversely harmed. The trading price of our common stock could decline due to any of these risks, and, as a result, you may lose all or part of your investment.

Business and Operational Risks

The COVID-19 pandemic could have a material adverse effect on our business, results of operations and financial condition in the future.

The COVID-19 pandemic has resulted in authorities worldwide implementing numerous measures to contain or mitigate the outbreak of the virus, such as travel bans and restrictions, border controls, limitations on business activity, social distancing requirements, quarantines, and shelter-in-place orders. These measures have caused, and are continuing to cause, business slowdowns or shutdowns in affected areas, both regionally and worldwide. The impact of the pandemic on our business and operations and our ability to execute our strategic plans remains uncertain and will depend on many unpredictable factors outside our control, including, without limitation, the extent, trajectory and duration of the pandemic, the development, availability and distribution of vaccines and other effective treatments to treat the COVID-19 virus and any new variants thereof, the emergence of new variants that are more contagious, symptomatic or fatal and the time the medical community requires to respond to such variants, the imposition of and compliance with protective public safety measures, and the impact of the pandemic on the global economy, and the related impacts on our development pipeline and on demand for our products.

Since the end of the first quarter of 2020, we have initiated several precautions in accordance with local regulations and guidelines to mitigate the spread of COVID-19 infection across our businesses. These precautions have impacted the way we carry out our business, including additional sanitation and cleaning procedures in our laboratories and other facilities, on-site COVID-19 testing, temperature and symptom confirmations, remote working when possible, and implementation of social distancing and staggered worktime requirements for our employees who must work on-site. If we are required to continue such measures for an extended period of time, particularly in sites with significant headcount such as our Emeryville, California headquarters, it could impact the ability of our employees to collaborate efficiently and advance research and development projects as productively as they could in a typical lab environment or office setting. In addition, the loss or unavailability of our R&D staff or other key employees and executives, as a result of sickness of employees or their families or the responsibility of employees to manage family obligations while working from home, could negatively impact our business and operations and our ability to operate or execute our business strategy. Continued employee telecommuting activity also increases the risk of a security breach of our information technology systems. The changed environment under which we are operating could have an impact on our internal controls over financial reporting.

Moreover, the ongoing impacts of the COVID-19 pandemic could result in interruptions or delays in the operations of regulatory authorities, which may impact review or approval timelines; delays in necessary interactions with other agencies and contractors due to limitations in employee resources or forced furlough of government employees; termination of, or difficulties in procuring or maintaining, arrangements with third parties upon whom we depend such as manufacturers, including contract manufacturing organizations, suppliers and other strategic partners; and disruptions or restrictions on our ability to pursue partnerships and other business transactions. As a result of the COVID-19 pandemic, we have experienced disruption and delays in our global supply chain. For example, during the first half of 2020, we experienced COVID-19-related delays in sourcing alcohol for our Pipette hand sanitizer, and if the COVID-19 pandemic worsens, we may experience supply disruptions due to temporary closures, production

slowdowns, staffing shortages, logistics, delays and disruptions in the manufacture and/or shipment of our products, including facilities we rely upon in Brazil, and delays and disruptions with respect to our new business activities in China.

Since the start of the COVID-19 pandemic in early 2020, there has been an overall decline in consumer spending particularly in retail brick-and-mortar channels due to store closures by our retail partners as mandated by local laws. Although we have experienced an increase in digital commerce and online purchasing, the effects of a prolonged pandemic could result in a continued negative impact on consumer spending, customer preferences, and overall demand. In addition, if COVID-19 impacts the financial position of our customers, resale channel partners or any of our collaboration partners, we may have difficulty collecting receivables or milestone and royalty payments, and our business and results of operations could be exposed to risks associated with uncollectible accounts or defaults on contractual payment obligations by our collaboration partners. If we are unable to generate sufficient cash from operations due to impacts of the COVID-19 pandemic or otherwise, we may need to raise additional funds. While the COVID-19 pandemic has not materially impacted our liquidity and capital resources to date. The duration and severity of any further economic or market impact of the COVID-19 pandemic remain uncertain, and there can be no assurance that it will not have an adverse effect on our liquidity and capital resources, including our ability to access capital markets, in the future, on terms that are favorable to us, or at all.

A limited number of customers, distributors and collaboration partners account for a material portion of our revenues, and the loss of major customers, distributors or collaboration partners could harm our operating results.

Our revenues have varied materially from quarter to quarter and are dependent on sales to, and collaborations with, a limited number of customers, distributors and/or collaboration partners. We cannot be certain that customers, distributors and/or collaboration partners that have accounted for material revenues in past periods, individually or as a group, will continue to generate similar revenues in any future period. If we fail to renew with, or if we lose, a major customer, distributor or collaboration partner, our revenues could decline if we are unable to replace the lost revenues with revenues from other sources.

Further, since our business depends in part on such collaboration agreements, it may be difficult for us to replace any such lost revenues through additional collaborations in any period, as revenue from such new collaborations will often be recognized over multiple quarters or years.

If we do not meet technical, development and commercial milestones in our collaboration agreements, our future revenues and financial results will be adversely impacted.

We have entered into a number of agreements regarding the development of certain of our products and, in some cases, for ultimate sale of certain products to the customer under the agreement. Most of these agreements do not affirmatively obligate the other party to purchase specific quantities of any products, and most contain important conditions that must be satisfied before additional research and development funding or product purchases would occur. These conditions include research and development milestones (including technical specifications) that must be achieved to the satisfaction of our collaboration partners, which we cannot be certain we will achieve. If we do not achieve these contractual milestones, our revenues and financial results will be adversely affected.

We face challenges producing our products at commercial scale or at commercially viable cost and may not be able to commercialize our products to the extent necessary to make a profit or sustain and grow our current business.

To commercialize our products, we must be successful in using our yeast strains to produce target molecules at commercial scale or at a commercially viable cost. If we cannot achieve commercially viable production economics

for enough products to support our business plan, including through establishing and maintaining sufficient production scale and volume, we will be unable to achieve a sustainable products business. Our production costs depend on many factors that could have a negative effect on our ability to offer our planned products at competitive prices, including, in particular, our ability to establish and maintain sufficient production scale and volume, feedstock costs, exchange rates (primarily the Brazil Real versus the U.S. Dollar) and contract manufacturing costs.

We face financial risk associated with scaling up production to reduce our production costs. To reduce per-unit production costs, we must increase production to achieve economies of scale and to be able to sell our products with positive margins. However, if we do not sell production output in a timely manner or in sufficient volumes, our investment in production will lead to higher working capital costs, which harm our cash position and could generate losses. Additionally, we may incur added costs in storage and we may face issues related to the decrease in quality of our stored products, which could adversely affect the value of such products. Since achieving competitive product prices generally requires increased production volumes and our manufacturing operations and cash flows from sales are in their early stages, we have had to produce and sell products at a loss in the past, and may continue to do so as we build our business. If we are unable to achieve adequate revenues from a combination of product sales and other sources, we may not be able to invest in production and we may not be able to pursue our business plans. In addition, in order to attract potential collaboration or joint venture partners, or to meet payment milestones under existing or future collaboration agreements, we have in the past and may in the future be required to guarantee or meet certain levels of production costs. If we are unable to reduce our production costs to meet such guarantees or milestones, our net cash flow will be further reduced.

If we are not able to successfully commence, scale-up or sustain operations at existing and planned manufacturing facilities, our customer relationships, business and results of operations may be adversely affected.

A substantial component of our planned production capacity in the near- and long-term depends on successful operations at our existing and potential large-scale production plants. We commenced operations at our first purpose-built, large-scale production facility located in Brotas, Brazil in 2012. In December 2017, we sold that facility to DSM and concurrently entered into a supply agreement with DSM to purchase output from the facility, which represents a significant portion of our expected supply needs (see Note 11, "Related Party Transactions" in Part II, Item 8 of this Annual Report on Form 10-K for more information). We are building a new purpose-built, large-scale ingredients plant in Brazil, which we anticipate will allow for the manufacture of up to five products concurrently and to produce both our specialty ingredients portfolio and our alternative sweetener product. We currently anticipate facility construction to be completed by the end of 2021; however, there can be no assurances that we will be able to complete such facility on our expected timeline, if at all. Delays or problems in the construction, start-up or operation of such facilities could cause delays in our ramp-up of production and hamper our ability to reduce our production and logistics costs. Delays in construction can occur due to a variety of factors, including regulatory requirements, COVID-19-related factors and our ability to fund construction and commissioning costs.

Once our large-scale production facility is built, we must successfully commission it, and it must perform as we expect. If we encounter significant delays in financing, cost overruns, engineering issues, contamination problems, equipment or raw material supply constraints, unexpected equipment maintenance requirements, safety issues, work stoppages or other serious challenges in bringing this facility online and operating it at commercial scale, including as a result of the impacts of the COVID-19 pandemic, we may be unable to produce our renewable products in the time frame and at the cost we have planned. It is difficult to predict the effects of scaling up production of industrial fermentation to commercial scale, as it involves various risks to the quality and consistency of our molecules. In addition, in order to produce molecules at existing and potential future plants, we have been and may in the future be required to perform thorough transition activities and modify the design of the plant. Any

modifications to the production plant could cause complications in the operations of the plant, which could result in delays or failures in production. If we are unable to create or obtain additional manufacturing capacity necessary to meet existing and potential customer demand, we may need to continue to use, or increase our use of, contract manufacturing sources, which may not be available on terms acceptable to us, if at all, and generally entail greater cost to us and would therefore reduce our anticipated gross margins. Further, if our efforts to increase (or commence, as the case may be) production at this facility are not successful, our partners may decide not to work with us to develop additional production facilities, demand more favorable terms or delay their commitment to invest capital in our production. If we are unable to create and sustain manufacturing capacity and operations sufficient to satisfy the existing and potential demand of our customers and partners, our business and results of operations may be adversely affected.

In addition, the production of our products at our planned purpose-built, large-scale production facility will require large volumes of feedstock. For this facility in Brazil, we plan to rely primarily on Brazilian sugarcane. While in certain cases we have entered into feedstock agreements with suppliers which we expect to supply the sugarcane feedstock necessary to produce our products at our facility in Brazil that specify the pricing, quantity and product specifications, we cannot predict the future availability or price of these various feedstocks, nor can we be sure that our mill partners will be able to supply it in sufficient quantities or in a timely manner. Furthermore, to the extent we are required to rely on sugar feedstock other than Brazilian sugarcane, the cost of such feedstock may be higher than we expect, increasing our anticipated production costs. Feedstock crop yields and sugar content depend on weather conditions, such as rainfall and temperature. Weather conditions have historically caused volatility in the sugar industries by causing crop failures or reduced harvests. Excessive rainfall can adversely affect the supply of sugarcane and other sugar feedstock available for the production of our products by reducing the sucrose content and limiting growers' ability to harvest. Crop disease and pestilence can also occur from time to time and can adversely affect feedstock growth, potentially rendering useless or unusable all or a substantial portion of affected harvests. With respect to sugarcane, its seasonal availability and price, the limited amount of time during which it keeps its sugar content after harvest, and the fact that sugarcane is not itself a traded commodity, increase supply risks and limit our ability to substitute supply. If production of sugarcane or any other feedstock we may use to produce our products is adversely affected by these or other conditions, our production will be impaired, increasing costs to our operations and adversely affecting our business.

Our use of contract manufacturers exposes us to risks relating to costs, supply and delivery, and logistics, and loss or termination of contract manufacturing relationships could harm our ability to meet our production goals.

In addition to our planned production facility discussed above, we must commercially produce, process and manufacture our products through the use of contract manufacturers and we anticipate that we will continue to use contract manufacturers for the foreseeable future. Establishing and operating contract manufacturing facilities requires us to make significant capital expenditures, which reduces our cash and places such capital at risk. Also, contract manufacturing agreements may contain terms that commit us to pay for capital expenditures and other costs and amounts incurred or expected to be earned by the plant operators and owners, which can result in contractual liability and losses for us even if we terminate a particular contract manufacturing arrangement or decide to reduce or stop production under such an arrangement. Further, we cannot be sure that contract manufacturers will be available when we need their services, that they will be willing to dedicate a portion of their capacity to our projects, or that we will be able to reach acceptable price, delivery and other terms with them for the provision of their production services.

The locations of contract manufacturers can pose additional cost, logistics and feedstock challenges. If production capacity is available at a plant that is remote from usable chemical finishing or distribution facilities, or from customers, we will be required to incur additional expenses in shipping products to other locations. Such costs

could include shipping costs, compliance with export and import controls, tariffs and additional taxes, among others. In addition, we may be required to use feedstock from a particular region for a given production facility. The feedstock available in such region may not be the least expensive or most effective feedstock for production, which could materially raise our overall production cost or reduce our product's quality until we are able to optimize the supply chain.

Moreover, we rely on contract manufacturers to produce and/or provide downstream processing of our products, and we anticipate that we will continue to use contract manufacturers for the foreseeable future. If we are unable to secure the services of contract manufacturers when and as needed, we may lose customer opportunities and the growth of our business may be impaired. If we shift priorities and adjust anticipated production levels (or cease production altogether) at contract manufacturing facilities, such adjustments or cessations could also result in disputes or otherwise harm our business relationships with contract manufacturers. In addition, reliance on external sources for our other target molecules could create a risk for us if a single source or a limited number of sources of manufacturing runs into operational issues, creating risk of loss of sales and profitability. Reducing or stopping production at one facility while increasing or starting up production at another facility generally results in significant losses of production efficiency, which can persist for significant periods of time. Also, in order for production to commence under our contract manufacturing arrangements, we generally must provide equipment for such operations, and we cannot be assured that such equipment can be ordered or installed on a timely basis, at acceptable costs, or at all. Further, in order to establish operations at new contract manufacturing facilities, we need to transfer our yeast strains and production processes from our labs to commercial plants controlled by third parties, which may pose technical or operational challenges that delay production or increase our costs.

Our ability to establish substantial commercial sales of our products is subject to many risks, any of which could prevent or delay revenue growth and adversely impact our customer relationships, business and results of operations.

There can be no assurance that our products will be approved or accepted by customers, including customers of our branded products, or that we will be able to sell our products profitably at prices and with features sufficient to establish demand. The potential customers for our products generally have well-developed manufacturing processes and arrangements with suppliers of the chemical components of their products and may have a resistance to changing these processes and components. These potential customers frequently impose lengthy and complex product qualification procedures on their suppliers, influenced by consumer preference, manufacturing considerations such as process changes and capital and other costs associated with transitioning to alternative components, supplier operating history, established business relationships and agreements, regulatory issues, product liability and other factors, many of which are unknown to, or not well understood by, us. Satisfying these processes may take many months. Similarly, customers of our branded products may have a resistance to accept our alternative compositions for such products. Additionally, we may be subject to product safety testing and may be required to meet certain regulatory and/or product safety standards. Meeting these standards can be a time-consuming and expensive process, and we may invest substantial time and resources into such qualification efforts without ultimately securing approval. If we are unable to convince these potential customers, the consumers who purchase end-products containing our products and the customers of our direct-to-consumer products that our products are comparable to the chemicals that they currently use or that the use of our products is otherwise to their benefit, we will not be successful in entering these markets and our business will be adversely affected.

Moreover, in order to successfully market our direct-to-consumer products, we must continue to build our formulation, production, logistics, sales, marketing, digital, managerial, compliance, and related capabilities or make arrangements with third parties to perform these services. If we are unable to establish adequate marketing, sales and distribution capabilities, whether independently or with third parties, we may not be able to appropriately commercialize such products. Additionally, the internet and other new technologies facilitate competitive entry and

comparison shopping for our consumer products, and our digital channel competes against numerous websites, mobile applications and catalogs, which may have a greater volume of circulation and web traffic or more effective marketing through online media and social networking sites. There is no assurance that we will be able to continue to successfully maintain or expand our digital sales channels and respond to shifting consumer traffic patterns and digital buying trends. Our inability to adequately respond to these risks and uncertainties or successfully maintain and expand our digital business could have an adverse impact on our results of operations.

The price and availability of sugarcane and other feedstocks can be volatile as a result of changes in industry policy and may increase the cost of production of our products.

In Brazil, Conselho dos Produtores de Cana-de-Açúcar, Açúcar e Etanol do Estado de São Paulo (Council of Sugarcane, Sugar and Ethanol Producers in the State of São Paulo, or "Consecana"), an industry association of producers of sugarcane, sugar and ethanol, sets market terms and prices for general supply, lease and partnership agreements for sugarcane. If Consecana makes changes to such terms and prices, it could result in higher sugarcane prices and/or a significant decrease in the volume of sugarcane available for the production of our products. In addition, if the availability of sugarcane juice or syrup or other feedstocks is restricted or limited due to the ongoing impacts of the COVID-19 global pandemic, weather conditions, land conditions or any other reason, we may not be able to manufacture our products in a timely or cost-effective manner, or at all, which would have a material adverse effect on our business.

We expect to face competition for our products from existing suppliers, and if we cannot compete effectively against these companies, products or prices, we may not be successful in bringing our products to market, demand for some of our renewable products may decline, or we may be unable to further grow our business.

We expect that our renewable products will compete with both the traditional products that are currently being used in our target markets and with the alternatives to these existing products that established enterprises and new companies are seeking to produce. In the markets that we have entered, and in other markets that we may seek to enter in the future, we will compete primarily with the established providers of ingredients currently used in products in these markets. Producers of these incumbent products include global health and nutrition companies, large international chemical companies and companies specializing in specific products, such as flavor or fragrance ingredients, squalane or essential oils. We may also compete in one or more of these markets with products that are offered as alternatives to the traditional products being offered in these markets.

With the emergence of many new companies seeking to produce products from renewable sources, we may face increasing competition from such companies. As they emerge, some of these companies may be able to establish production capacity and commercial partnerships to compete with us. If we are unable to establish production and sales channels that allow us to offer comparable products at attractive prices, we may not be able to compete effectively with these companies. Similarly, if we cannot demonstrate that our products are comparable or better alternatives to existing products and to any alternative products that are being developed for the same markets based on some combination of product cost, availability, performance, and consumer preference characteristics, our renewable products may not succeed in the market, which would have a material adverse effect on our business, financial condition, results of operations and growth prospects.

We believe the primary competitive factors in our target markets are:

- product performance and other measures of quality;
- product price;
- product cost;
- sustainability and social responsibility;

- dependability of naturally sourced ingredients; and
- infrastructure compatibility of products.

Many of our competitors are much larger than us and have well-developed distribution systems and networks for their products, valuable historical relationships with the potential customers we are seeking to serve and much more extensive sales and marketing programs in place to promote their products. In order to be successful, we must convince customers that our products are at least as effective as the traditional products they are seeking to replace, and we must provide our products on a cost basis that does not greatly exceed these traditional products and other available alternatives. Some of our competitors may use their influence, brands, and significant resources to impede the development and acceptance of renewable products of the type that we are seeking to produce.

We are subject to risks related to our reliance on collaboration arrangements to fund development and commercialization of our products, and our financial results may be adversely impacted if we fail to meet technical, development, or commercial milestones in such agreements.

For most product markets where we are seeking to enter and grow, we have collaboration partners to fund the research and development, commercialization, and production efforts required for the target products. Typically, we provide limited exclusive rights and revenue-sharing with respect to the production and sale of particular products in specific markets in exchange for such up-front funding. These exclusivity, revenue-sharing, and other similar terms limit our ability to commercialize our products and technology and may impact the size of our business or our profitability in ways that we do not currently envision. In addition, most of these agreements do not affirmatively obligate the other party to purchase specific quantities of any products, and most contain important conditions that must be satisfied before additional research and development funding or product purchases would occur. These conditions include research and development programs and milestones, including technical specifications that must be achieved to the satisfaction of our collaboration partners. We may focus our efforts and resources on potential discovery efforts, product targets or candidates that require substantial technical, financial, and human resources which we cannot be certain we will achieve.

In addition, we may encounter numerous uncertainties and difficulties in developing, manufacturing, and commercializing any new products subject to these collaboration arrangements that may delay or prevent us from realizing their expected benefits or enhancing our business, including uncertainties on the feasibility of taking new molecules to commercial scale. Any failure to successfully develop, produce, and commercialize products under our existing and future collaboration arrangements could have a material adverse effect on our business, financial condition, results of operation and growth prospects.

Revenues from these types of relationships are a key part of our cash plan for 2021 and beyond. If we fail to collect expected collaboration revenues, we may be unable to fund our operations or pursue development and commercialization of our planned products. To achieve our collaboration revenue targets from year to year, we may be obliged to source new partners or enter into agreements that contain less favorable terms. Historically, the process of negotiating and finalizing collaboration arrangements with our partners has at times been lengthy and unpredictable. Furthermore, as part of our current and future collaboration arrangements, we may be required to make significant capital investments at our existing or planned production facilities in order to develop, produce, and commercialize molecules or other products. Any failure or difficulties in maintaining existing collaboration arrangements or establishing new collaboration arrangements, or building up or retooling our operations to meet the demands of our collaboration partners could have a material negative impact on our business, including our ability to achieve commercial viability for our products, lead to the inability to meet our contractual obligations and could cause us to allocate or divert capital, personnel, and other resources from our organization, which could adversely affect our business and reputation.

Our collaboration arrangements may restrict or prevent our future business activity in certain markets or industries, which could harm our ability to grow our business.

As part of our collaboration arrangements in the ordinary course of business, we grant to our partners exclusive rights with respect to the development, production, and/or commercialization of particular products or types of products in specific markets in exchange for up-front funding and/or downstream royalty arrangements. These rights may inhibit potential collaboration or strategic partners or potential customers from entering into negotiations with us about further business opportunities, and we may be restricted or prevented from engaging with other partners or customers in those markets, which may limit our ability to grow our business or influence our strategic focus, and may lead to an inefficient allocation of capital resources.

In the past, we have had to grant concessions to existing partners in exchange for such partners waiving or modifying their exclusive rights with respect to a particular product, type of product or market in order to engage with a third party with respect to such product, product type, or market. Such concessions are often costly or further limit our ability to conduct future business with respect to a certain product or market. There can be no assurance that existing partners will be willing to grant waivers of or modify their exclusive rights in the future on favorable terms, if at all. If we are unable to engage other potential partners with respect to particular products, product types or markets for which we have previously granted exclusive rights, our ability to grow our business would be harmed, and our results of operations may be adversely affected.

Our relationship with DSM exposes us to financial and commercial risks.

In May 2017, DSM made an investment in the Company and, in connection therewith, we entered into a stockholder agreement with DSM (subsequently amended) which provides DSM with certain rights, including the right to designate up to two members of our board of directors as well as exclusive negotiating rights in connection with certain future commercial projects and arrangements. Subsequently, in July and September 2017, we entered into collaboration agreements (and related license agreements) with DSM to jointly develop several new molecules in the Health and Nutrition field using our technology, which we would produce and DSM would commercialize. In December 2017, we completed the sale of our Brotas, Brazil production facility to DSM and, in connection therewith, entered into several commercial agreements with DSM, including a supply agreement to procure a substantial portion of our product supply requirements, and borrowed $25 million from DSM. In December 2020, we entered into a Farnesene Framework Agreement with DSM, under which we assigned to DSM the supply of Farnesene to Givaudan International SA (Givaudan) for the production and sale of a single specialty ingredient and, in consideration thereof, DSM will pay the Company up to $50 million in the aggregate, of which $30 million was paid in December 2020, $10 million is due in the first quarter of 2021, and the remainder in milestone payments thereafter. For more information regarding these and other transactions and arrangements with DSM, please see Note 4, "Debt," Note 6, "Stockholders' Deficit," Note 10, "Revenue Recognition" and Note 11, "Related Party Transactions" in Part II, Item 8 of this Annual Report on Form 10-K.

DSM, due to its presence on our board of directors, equity ownership in the Company, and commercial relationships with the Company, may be able to control or influence our management, operations and affairs, as well as matters requiring stockholder approval, including the approval of significant corporate transactions, such as the disposition of our intellectual property, mergers, consolidations or the sale of all or substantially all of our assets. Due to its various relationships with the Company, DSM may have interests different from, and may not act in the best interests of, our other stockholders. Consequently, our relationship with DSM may have the effect of delaying or preventing a change of control, or a change in our management or board of directors, or discouraging a potential acquirer from making a tender offer or otherwise attempting to obtain control of the Company, even if such actions would benefit our other stockholders.

A significant portion of our operations are centered in Brazil, and our business could be adversely affected if we do not operate effectively in that country.

We may be subject to risks associated with the concentration of essential product sourcing and operations in Brazil. The Brazilian government has changed in the past, and may change in the future, monetary, taxation, credit, tariff, labor, export, and other policies to influence the course of Brazil's economy. For example, the government's actions to control inflation have involved interest rate adjustments. We have no control over, and cannot predict what, policies or actions the Brazilian government may take in the future. Our business, financial performance, and prospects may be adversely affected by, among others, the following factors:

- delays or failures in securing licenses, permits, or other governmental approvals necessary to build and operate facilities, use our yeast strains to produce products, and export such products for sale outside Brazil;
- rapid consolidation in the sugar and ethanol industries in Brazil, which could result in a decrease in competition;
- political, economic, diplomatic, or social instability in, or in the region surrounding, Brazil;
- changing interest rates;
- tax burden and policies;
- effects of changes in currency exchange rates;
- any changes in currency exchange policy that lead to the imposition of exchange controls or restrictions on remittances abroad;
- export or import restrictions that limit our ability to move our products out of Brazil or interfere with the import of essential materials into Brazil;
- changes in, or interpretations of, foreign regulations that may adversely affect our ability to sell our products or repatriate profits to the United States;
- tariffs, trade protection measures, and other regulatory requirements;
- compliance with U.S. and foreign laws that regulate the conduct of business abroad;
- compliance with privacy, anti-corruption, and anti-bribery laws, including certain anti-corruption and privacy laws recently enacted in Brazil;
- an inability, or reduced ability, to protect our intellectual property in Brazil including any effect of compulsory licensing imposed by government action; and
- difficulties and costs of staffing and managing foreign operations.

We cannot predict whether the current or future Brazilian government will implement changes to existing policies on taxation, exchange controls, monetary strategy, labor relations, social security and the like, nor can we estimate the impact of any such changes on the Brazilian economy or our operations.

We continue to expand our international footprint and operations, and we may expand further in the future, which subjects us to a variety of risks and complexities which, if not effectively managed, could negatively affect our business.

We maintain operations in foreign jurisdictions other than Brazil, and may in the future expand, or seek to expand, our operations to additional foreign jurisdictions. For example, in 2018, we announced plans to increase our commercial activities in China. Operating in China exposes us to political, legal and economic risks. In particular, the political, legal and economic climate in China, both nationally and regionally, is fluid and unpredictable. Our ability to operate in China may be adversely affected by changes in U.S. and Chinese laws and regulations such as those related to taxation, import and export tariffs, environmental regulations, genetically modified microorganisms (GMM), land use rights, product testing requirements, intellectual property, currency controls, network security, and other matters. In addition, we may not obtain or retain the requisite permits to operate in China, and costs or operational limitations may be imposed in connection with obtaining and complying with such permits. In addition, Chinese trade regulations are in a state of flux, and we may become subject to other forms of taxation, tariffs and

duties in China. Furthermore, our counterparties in China may use or disclose our confidential information or intellectual property to competitors or third parties, which could result in the illegal distribution and sale of counterfeit versions of our products. If any of these events occur, our business, financial condition and results of operations could be materially and adversely affected.

In addition, a significant percentage of the production, downstream processing and sales of our products occurs outside the United States or with vendors, suppliers or customers located outside the United States. If tariffs or other restrictions are placed by the United States on foreign imports from Brazil, European or other countries where we operate or seek to operate, or any related counter-measures are taken, our business, financial condition, results of operations and growth prospects may be harmed. Tariffs may increase our cost of goods, which could result in lower gross margin on certain of our products. If we raise prices to account for any such increase in costs of goods, the competitiveness of the affected products could potentially be reduced. In either case, increased tariffs on imports from Brazil, European or other countries where we operate or seek to operate could materially and adversely affect our business, financial condition and results of operations. Furthermore, in retaliation for any tariffs imposed by the United States, other countries may implement tariffs on a wide range of American products, which could increase the cost of our products for non-U.S. customers located in such countries. Any increase in the cost of our products for non-U.S. customers, which represent a substantial portion of our sales, could result in a decrease in demand for our products by such customers. Trade restrictions implemented by the United States or other countries could materially and adversely affect our business, financial condition and results of operations.

Financial Risks

If we fail to maintain an effective system of internal controls, we may not be able to report our financial results accurately or in a timely manner or prevent fraud; in that case, our stockholders could lose confidence in our financial reporting, which would harm our business and could negatively impact the price of our stock.

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. In addition, Section 404 of the Sarbanes-Oxley Act of 2002 (Section 404) and related SEC rules require management to assess the effectiveness of our internal control over financial reporting. Effective internal controls are necessary for us to provide reliable financial reports and help us to prevent fraud. The process of implementing our internal controls and complying with Section 404 is expensive and time consuming and requires significant continuous attention of management. We cannot be certain that these measures will ensure that we maintain adequate controls over our financial processes and reporting in the future.

Control deficiencies in 2017 and 2018 resulted in the restatement of our audited consolidated financial statements for the year ended December 31, 2017 and our interim condensed consolidated financial statements for March 31, 2018, June 30, 2018 and September 30, 2018. Also, a control deficiency in 2019 identified prior to issuing our condensed consolidated financial statements as of and for the three and nine months ended September 30, 2019 resulted in us concluding this control deficiency was a material weakness and that our internal control over financial reporting was not effective as of December 31, 2019, and created a reasonable possibility that a further material misstatement of our annual or interim consolidated financial statements would not be prevented or detected on a timely basis.

Our management has remediated this material weakness. We cannot, however, guarantee that additional material weaknesses or significant deficiencies in our internal controls will not be discovered or occur in the future. If these events occur, we may be unable to report our financial results accurately or on a timely basis, which could cause our reported financial results to be materially misstated and result in the loss of investor confidence and adversely

affect the market price of our common stock and our ability to access the capital markets, and we could be subject to sanctions or investigations by the Nasdaq Stock Market (Nasdaq), the SEC or other regulatory authorities. See Part II, Item 9A "Controls and Procedures" of this Annual Report on Form 10-K for additional information.

In addition, to the extent we create joint ventures or have any variable interest entities and the financial statements of such entities are not prepared by us, we will not have direct control over their financial statement preparation. As a result, we will, for our financial reporting, depend on what these entities report to us, which could result in us adding monitoring and audit processes to those operations and increase the difficulty of implementing and maintaining adequate internal control over our financial processes and reporting in the future, which could lead to delays in our external reporting. In particular, this may occur in instances in which where we are establishing such entities with commercial partners that do not have sophisticated financial accounting processes in place, or where we are entering into new relationships at a rapid pace, straining our integration capacity. Additionally, if we do not receive the information from the joint venture or variable interest entity on a timely basis, it could cause delays in our external reporting.

Even if we conclude in the future, and our independent registered public accounting firm concurs, that our internal control over financial reporting provides reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles, because of its inherent limitations, internal control over financial reporting may not prevent or detect fraud or misstatements. Failure to implement required new or improved controls, or difficulties encountered in their implementation, could harm our results of operations or cause us to fail to meet our reporting obligations, which could reduce the market's confidence in our financial statements and harm our stock price. In addition, failure to comply with Section 404 could subject us to a variety of administrative sanctions, including SEC action, the suspension or delisting of our common stock from the stock exchange on which it is listed, and the inability of registered broker-dealers to make a market in our common stock, which could further reduce our stock price and could harm our business.

We have a history of net losses to date, anticipate continuing to incur losses in the future, and may not be able to achieve or sustain profitability.

We have incurred operating losses since our inception, and we expect to continue to incur losses and negative cash flows from operations for at least the next 12 months following the issuance of this Annual Report on Form 10-K. As of December 31, 2020, we had negative working capital of $16.5 million and an accumulated deficit of $2.1 billion.

Our cash and cash equivalents of $30.2 million as of December 31, 2020 is not expected to be sufficient to fund expected cash flow requirements from operations and cash debt service obligations through March 31, 2022. The Company has previously announced strategic transactions which are expected to generate substantial cash during 2021 and beyond. Solely based on cash from operations, there is doubt about our ability to continue as a going concern within one year after the date that these financial statements are issued. The consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty. Our ability to continue as a going concern will depend, in large part, on our ability to minimize the anticipated negative cash flows from operations during the 12 months from the date of this filing and to raise additional cash proceeds through strategic transactions, financings, and refinance or extend debt maturities occurring later in 2021, all of which is uncertain and outside our control. Further, our operating plan for 2021 contemplates a significant reduction in our net operating cash outflows as compared to the year ended December 31, 2020, resulting from (i) revenue growth from sales of existing and new products with positive gross margins, (ii) reduced production costs as a result of manufacturing and technical developments, (iii) continued cash inflows from collaboration and grants and licenses and royalties, (iv) the monetization of certain assets, and (v) lower debt servicing expense. If we are unable to complete these actions, we may be unable to meet our operating cash flow needs and our

obligations under our existing debt facilities. This could result in an acceleration of our obligation to repay all amounts outstanding under those facilities, and we may be forced to obtain additional equity or debt financing, which may not occur timely or on reasonable terms, if at all, and/or liquidate our assets.

Our consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty, which could have a material adverse effect on our financial condition and cause investors to suffer the loss of all or a substantial portion of their investment.

We may not be able to generate sufficient cash inflows from the sales of renewable products, licenses and royalties, and grants and collaborations to fund our anticipated operations and to service our debt obligations.

Our planned working capital needs and operating and capital expenditures for 2021, and our ability to service our outstanding debt obligations, are dependent on significant inflows of cash from product sales, licenses, and royalties, and grants and collaborations and, if needed, additional financing arrangements. We will continue to need to fund our research and development and related activities and to provide working capital to fund production, procurement, storage, distribution, and other aspects of our business. Some of our anticipated funding sources, such as research and development collaborations, are subject to the risks that we may not be able to meet milestones, or that collaborations may end prematurely for reasons that may be outside of our control (including technical infeasibility of the project or a collaborator's right to terminate without cause). The inability to generate sufficient cash flow, as described above, could have a material effect on our ability to continue with our business plans and our status as a going concern.

If we have insufficient cash, our ability to continue as a going concern would be jeopardized, and we would take the following actions:

- Shift focus to existing products and customers with significantly reduced investment in new product and commercial development efforts;
- Reduce or delay uncommitted capital expenditures, nonessential facilities and lab equipment, and information technology projects;
- Closely monitor our working capital position with contract manufacturers and other suppliers, as well as suspend operations at pilot plants and demonstration facilities; and
- Reduce expenditures for third party contractors, including consultants, professional advisors, and other vendors.

Implementing this plan could have a negative impact on our ability to continue our business as currently contemplated, including, without limitation, delays or failures in our ability to:

- Achieve planned production levels;
- Develop and commercialize products within planned timelines or at planned scales;
- Introduce new consumer brands; and
- Continue other core activities.

Furthermore, any inability to scale-back operations as necessary, and any unexpected liquidity needs, could create pressure to implement more severe measures. Such measures could materially affect our ability to meet contractual requirements and increase the severity of the consequences described above.

We have incurred substantial debt, which could impair our flexibility and access to capital and adversely affect our financial position, and our business would be materially adversely affected if we are unable to service our debt obligations.

As of December 31, 2020, the principal amounts due under our debt instruments (including related party debt) totaled $170.5 million, of which $56.5 million is classified as current. We expect to incur additional indebtedness

from time to time to finance working capital, product development efforts, strategic acquisitions, investments and partnerships, capital expenditures, including financing our new manufacturing facility in Brazil, or other general corporate purposes, subject to the restrictions contained in our debt agreements.

Our substantial indebtedness may:

- limit our ability to use our cash flow or obtain additional financing (on satisfactory terms or at all) to fund working capital, capital expenditures, product development efforts, acquisitions, investments and strategic alliances, and for other general corporate requirements;
- require us to use a substantial portion of our cash flow from operations to make debt service payments;
- increase our vulnerability to economic downturns and adverse competitive and industry conditions and place us at a competitive disadvantage compared to those of our competitors that are less leveraged;
- limit our flexibility in planning for, or reacting to, changes in our business and our industry and limit our ability to pursue other business opportunities, borrow more money for operations or capital in the future, and implement our business strategies;
- result in dilution to our existing stockholders in the event exchanges of our convertible notes are settled in common stock; and
- restrict our ability to grant additional liens on our assets, which may make it more difficult to secure additional financing in the future.

In addition, our cash balance is substantially less than the principal amount of our outstanding debt, and we will be required to generate cash from operations and raise additional working capital through future financings or sales of assets to enable us to repay this indebtedness as it becomes due. There can be no assurance that we will be able to generate cash or raise additional capital. If we are at any time unable to generate sufficient cash flow from operations to service our indebtedness when payment is due, we may be required to attempt to renegotiate the terms of the instruments relating to the indebtedness, seek to refinance all or a portion of the indebtedness or obtain additional financing. There can be no assurance that we would be able to successfully renegotiate such terms, that any such refinancing would be possible or that any additional financing could be obtained on terms that are favorable or acceptable to us, if at all. Any debt financing that is available could cause us to incur substantial costs and subject us to covenants that significantly restrict our ability to conduct our business. If we seek to complete additional equity financings, the interests of existing stockholders may be diluted. If we are unable to make payment on our secured debt instruments when due, the lenders under such instruments may foreclose on and sell the assets securing such indebtedness to satisfy our payment obligations, which could prevent us from accessing those assets for our business and conducting our business as planned, which could materially harm our financial condition and results of operations.

Our existing financing arrangements provide our secured lenders with liens on substantially all of our assets, including our intellectual property, and contain financial covenants and other restrictions on our actions, which may restrict our ability to pursue certain transactions and operate our business.

We have granted liens on substantially all of our assets, including our intellectual property, as collateral in connection with certain financing arrangements with an aggregate principal amount outstanding as of December 31, 2020 of $76.6 million and have agreed to significant covenants in connection with such transactions (see Note 4, "Debt" in Part II, Item 8 of this Annual Report on Form 10-K), including covenants that materially limit our ability to take certain actions, including our ability to pay dividends, make certain investments and other payments, incur additional indebtedness, undertake certain mergers and consolidations, and encumber and dispose of assets, and customary events of default, including failure to pay amounts due, breaches of covenants and warranties, material adverse effect events, certain cross defaults and judgements, and insolvency. A failure to comply with the covenants and other provisions of our debt instruments, including any failure to make a payment when required, would generally result in payment penalties or events of default under such instruments, the latter triggering acceleration of such indebtedness which could result in a material adverse effect on our business. If

such indebtedness were to be accelerated, it could trigger an event of default under our other outstanding indebtedness, permitting acceleration of a substantial portion of our indebtedness. We have in the past had certain of our debt instruments accelerated for failure to make a payment when due. While we have been able to cure these defaults to avoid additional cross-acceleration, we may not be able to similarly cure such a default in the future. Any required repayment of our indebtedness as a result of acceleration or otherwise would lower our current cash on hand such that we would not have those funds available for use in our business or for payment of other outstanding indebtedness.

Future revenues are difficult to predict, and our failure to predict revenue accurately may cause our results to be below our expectations or those of analysts or investors and could result in our stock price declining.

Our revenues are comprised of product revenues, licenses and royalties revenues, and grants and collaborations revenues. We generate our consumer and ingredients product revenues from sales to partners and distributors and from direct sales. Our collaboration, supply and distribution agreements do not usually include any specific purchase obligations. The sales volume of our products in any given period has been difficult to predict. A significant portion of our product sales is dependent upon the interest and ability of third-party distributors to create demand for, and generate sales of, such products to end-users. For example, if such distributors are unsuccessful in creating pull-through demand for our products with their customers, such distributors may purchase less of our products from us than we expect. Also, under revenue recognition rules, we are required to estimate royalties. These estimates could be subject to material adjustment in subsequent periods.

In addition, many of our new and novel products are intended to be a component of other companies' products; therefore, sales of our products may be contingent on our collaboration partners' and/or customers' timely and successful development and commercialization of end-use products that incorporate our products, and price volatility in the markets for such end-use products could adversely affect the demand for our products and the margin we receive for our product sales, which could harm our financial results. In addition, certain of our partners have the right to terminate their agreements with us if we undergo a change of control or a sale of our business, which could discourage a potential acquirer from making an offer to acquire the Company.

Further, we have in the past entered into, and expect in the future to enter into, research and development collaboration arrangements pursuant to which we receive payments from our collaboration partners. Certain collaboration arrangements include advance payments in consideration for grants of exclusivity or research and development activities to be performed by us. It has in the past been difficult for us to know with certainty when we will sign a new collaboration arrangement and receive payments thereunder. In addition, a portion of the advance payments we receive under our collaboration agreements is typically classified as contract liabilities and recognized over multiple quarters or years. As a result, achievement of our quarterly and annual financial goals has been difficult to forecast with certainty. Once a collaboration agreement has been signed, receipt of cash payments and/or recognition of related revenues may depend on our achievement of research, development, production or cost milestones, which may be difficult to predict. Our collaboration arrangements may also include future royalty payments upon commercialization of the products subject to the collaboration arrangements, which is uncertain and depends in part on the success of the counterparty in commercializing the relevant product. As a result, our receipt of royalty revenues and the timing thereof is difficult to predict with certainty.

Furthermore, in recent years, we have started to market and sell our consumer products directly to end-consumers in the clean beauty and personal care market. We only have a few years of experience in marketing through digital channels and selling directly to consumers. It is therefore difficult to predict how successful our efforts will be, and we may not achieve the product sales we expect to achieve on the timeline we anticipate, if at all. These factors have made it difficult to predict future revenues and have resulted in our revenues being below our previously announced guidance or analysts' estimates. We continue to face these risks in the future, which may cause our stock price to decline.

Our financial results could vary materially from quarter to quarter and are difficult to predict.

Our revenues and results of operations could vary materially from quarter to quarter because of a variety of factors, many of which are outside of our control. As a result, comparing our results of operations on a period-to-period basis may not be meaningful. Factors that could cause our quarterly results of operations to fluctuate include:

- ongoing impacts of the COVID-19 pandemic on our business operations;
- achievement, or failure, with respect to technology, product development or manufacturing milestones needed to allow us to enter identified markets on a cost-effective basis or obtain milestone-related payments from collaboration partners;
- delays or greater than anticipated expenses associated with the completion, commissioning, acquisition or retrofitting of new production facilities, or the time to ramp up and stabilize production at a new production facility or the transition (including ramp up) to producing new molecules at existing facilities or with a new contract manufacturer;
- depreciation of technology assets or the cost of conducting research and development activities on outdated equipment;
- impairment of assets based on shifting business priorities and working capital limitations;
- disruptions in the production process at any manufacturing facility, including disruptions due to seasonal or unexpected downtime as a result of feedstock availability, contamination, safety or other technical difficulties, or scheduled downtime as a result of transitioning equipment to the production of different molecules;
- losses of, or the inability to secure new, major customers, collaboration partners, contract manufacturers, suppliers or distributors;
- losses associated with producing our products as we ramp to commercial production levels;
- failure to recover value added tax (VAT) that we currently reflect as recoverable in our financial statements (e.g., due to failure to meet conditions for reimbursement of VAT under local law);
- the timing, size and mix of product sales to customers;
- increases in price or decreases in availability of feedstock;
- the unavailability of contract manufacturing capacity altogether or at reasonable cost;
- exit costs associated with terminating contract manufacturing relationships;
- fluctuations in foreign currency exchange rates;
- change in the fair value of derivative instruments;
- fluctuations in the price of and demand for sugar, ethanol, petroleum-based and other products for which our products are alternatives;
- seasonal variability in production and sales of our products;
- competitive pricing pressures, including decreases in average selling prices of our products;
- unanticipated expenses or delays associated with changes in governmental regulations and environmental, health, labor and safety requirements;
- departure of executives or other key management employees resulting in transition and severance costs;
- our ability to use our net operating loss carryforwards to offset future taxable income;
- business interruptions such as pandemics or natural disasters like earthquakes and tsunamis;
- our ability to integrate businesses that we may acquire;
- our ability to successfully collaborate with joint venture partners;
- risks associated with the international aspects of our business; and
- changes in general economic, industry and market conditions, both domestically and in our foreign markets.

Due to the factors described above, among others, the results of any quarterly or annual period may not meet our expectations or the expectations of our investors and may not be meaningful indications of our future performance.

Our international operations expose us to the risk of fluctuation in currency exchange rates and rates of foreign inflation, which could adversely affect our results of operations.

We currently incur material costs and expenses in Brazilian real and may in the future incur additional expenses in foreign currencies and derive a portion of our revenues in the local currencies of customers throughout the world. As a result, our revenues and results of operations are subject to foreign exchange fluctuations, which we may not be able to manage successfully. During the past few decades, the Brazilian currency in particular has faced frequent and substantial exchange rate fluctuations in relation to foreign currencies mostly because of political and economic conditions. There can be no assurance that the Brazilian real will not materially appreciate or depreciate against the U.S. dollar in the future. We also bear the risk that the rate of inflation in the foreign countries where we incur costs and expenses or the decline in value of the U.S. dollar compared to those foreign currencies will increase our costs as expressed in U.S. dollars. For example, future measures by the Central Bank of Brazil to control inflation, including interest rate adjustments, intervention in the foreign exchange market and actions to fix the value of the real, may weaken the U.S. dollar in Brazil. Whether in Brazil or elsewhere, we may not be able to adjust the prices of our products to offset the effects of inflation or foreign currency appreciation on our cost structure, which could increase our costs and reduce our net operating margins. If we do not successfully manage these risks through hedging or other mechanisms, our revenues and results of operations could be adversely affected.

Our U.S. GAAP operating results could fluctuate substantially due to the accounting for derivative liabilities and debt that we measure at fair value.

Our outstanding convertible debt instruments are accounted for under Accounting Standards Codification 815, Derivatives and Hedging (ASC 815), as embedded derivatives. ASC 815 requires companies to bifurcate conversion options from their host instruments and account for them as freestanding derivative financial instruments according to certain criteria. The current fair value of the derivative is remeasured to fair value at each balance sheet date, with a resulting non-cash gain or loss related to the change in the fair value of the derivative being charged to earnings (loss) in the statement of operations. We have determined that we must bifurcate and account for certain features of our convertible debt instruments as embedded derivatives in accordance with ASC 815. We have recorded these embedded derivative liabilities as non-current liabilities on our consolidated balance sheet with a corresponding discount at the date of issuance that is netted against the principal amount of the applicable instrument. The derivative liabilities are remeasured to fair value at each balance sheet date, with a resulting non-cash gain or loss related to the change in the fair value of the derivative liabilities being recorded in other income or expenses. There is no current observable market for this type of derivative and, as such, we determine the fair value of the embedded derivatives using the binomial lattice model. The valuation model uses the stock price, conversion price, maturity date, risk-free interest rate, estimated stock volatility and estimated credit spread. Changes in the inputs for these valuation models may have a material impact on the estimated fair value of the embedded derivative liabilities. For example, an increase in our stock price would result in an increase in the estimated fair value of the embedded derivative liabilities, if in this example, each of the other elements of the valuation model remained substantially unchanged from the last measurement date. The embedded derivative liabilities may have, on a U.S. GAAP basis, a substantial effect on our balance sheet from quarter to quarter and it is difficult to predict the effect on our future U.S. GAAP financial results, since valuation of these embedded derivative liabilities are based on factors largely outside of our control and may have a negative impact on our statement of operations and balance sheet. The effects of these embedded derivatives may cause our U.S. GAAP operating results to be below expectations, which may cause our stock price to decline. See Note 3, "Fair Value Measurement" in Part II, Item 8 of this Annual Report on Form 10-K for more information regarding the valuation of embedded derivatives in certain of our outstanding debt instruments.

In addition, we account for one of our outstanding debt instruments at fair value. That instrument is remeasured to fair value at each balance sheet date, with a resulting non-cash gain or loss from change in fair value of debt recorded in other income or expense.

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

In general, under Section 382 of the Internal Revenue Code (the Code), a corporation that undergoes an "ownership change," as defined in the Code, is subject to limitations on its ability to utilize its pre-ownership change net operating loss carryforwards (NOLs) to offset future taxable income. During the three years ended December 31, 2017, and the two years ended December 31, 2019, changes in our share ownership resulted in significant reductions in our NOLs pursuant to Section 382 of the 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 Code; if that occurs, our ability to utilize NOLs could be further limited. Furthermore, our ability to utilize NOLs of companies that we may acquire in the future may be subject to limitations under Section 382 of the Code. For these reasons, we may not be able to utilize a material portion of our reported NOLs as of December 31, 2020, even if we attain profitability, which could adversely affect our results of operations.

The restatement of our previously issued financial statements was time-consuming and expensive and could expose us to additional risks that could materially adversely affect our financial position, results of operations and cash flows.

On April 5, 2019, our Audit Committee, after consultation with management and our independent registered public accounting firm at the time, determined that we would restate our interim condensed consolidated financial statements for the quarterly and year-to-date periods ended March 31, 2018, June 30, 2018 and September 30, 2018, included in our Quarterly Reports on Form 10-Q for the fiscal quarters ended March 31, 2018, June 30, 2018 and September 30, 2018, respectively. In addition, on May 14, 2019, our Board of Directors, upon the recommendation of the Audit Committee, determined that we would restate our audited consolidated financial statements for the year ended December 31, 2017. The consolidated financial statements and related information included in our previously filed Annual Report on Form 10-K for the year ended December 31, 2017 and Quarterly Reports on Form 10-Q for the periods ended March 31, 2018, June 30, 2018 and September 30, 2018 and all earnings press releases and similar communications issued by the Company for such periods should not be relied upon and are superseded in their entirety by the Annual Report on Form 10-K/A for the year ended December 31, 2018.

As a result of the restatement and associated non-reliance on previously issued financial information, we became subject to a number of additional expenses and risks, including unanticipated expenses for accounting and legal fees in connection with or related to the restatement. Likewise, the attention of our management team was diverted by these efforts. In addition, we could also be subject to additional shareholder, governmental, regulatory or other actions or demands in connection with the restatement or other matters. Any such proceedings will, regardless of the outcome, consume a significant amount of management's time and attention and may result in additional legal, accounting, insurance and other expenses. If we do not prevail in any such proceeding, we could be required to pay damages or settlement costs. In addition, the restatement and related matters could impair our reputation or could cause our customers, shareholders, or other counterparties to lose confidence in us. Any of these occurrences could have a material adverse effect on our business, financial condition, results of operations, and stock price.

Regulatory, Intellectual Property, and Legal Risks

Ethical, legal and social concerns about products using genetically modified microorganisms could limit or prevent the use of our products and technologies and could harm our business.

Our technologies and products involve the use of genetically modified microorganisms (GMMs). Public perception about the safety of, and ethical, legal or social concerns over, genetically engineered products, including GMMs, could affect public acceptance of our products. If we are not able to overcome any such concerns relating to our products, our technologies may not be accepted by our customers or end-users. In addition, the use of GMMs has in the past received negative publicity, which could lead to greater regulation or restrictions on imports of our products. If our technologies and products are not accepted by our customers or their end-users due to negative publicity or lack of public acceptance, our business could be materially harmed.

Our use of genetically modified feedstocks and yeast strains to produce our products subjects us to risks of regulatory limitations and rejection of our products.

The use of GMMs, such as our yeast strains, is subject to laws and regulations in many countries, some of which are new and some of which are still evolving. In the United States, the Environmental Protection Agency (EPA), regulates the commercial use of GMMs as well as potential products produced from GMMs. Various states or local governments within the United States could choose to regulate products made with GMMs as well. While the strain of genetically modified yeast that we currently use for the development and commercial production of our target molecules, *S. cerevisiae*, is eligible for exemption from EPA review because it is generally recognized as safe, we must satisfy certain criteria to achieve this exemption, including but not limited to use of compliant containment structures, waste disposal and safety procedures, and we cannot be sure that we will meet such criteria in a timely manner, or at all. If exemption of *S. cerevisiae* is not obtained, our business may be substantially harmed. In addition to *S. cerevisiae*, we may seek to use different GMMs in the future that will require EPA approval. If approval of different GMMs is not secured, our ability to grow our business could be adversely affected.

In Brazil, GMMs are regulated by the National Biosafety Technical Commission (CTNBio). We have obtained approvals from CTNBio to use GMMs in a contained environment in our Brazil facilities for research and development purposes as well as at contract manufacturing facilities in Brazil for industrial-scale production of target products. As we continue to develop new yeast strains and deploy our technology at new production facilities in Brazil, we will be required to obtain further approvals from CTNBio in order to use these strains in industrial-scale commercial production in Brazil. We may not be able to obtain such approvals on a timely basis, or at all, and if we do not, our ability to produce our products in Brazil could be impaired, which would adversely affect our results of operations and financial condition.

In addition to our production operations in the United States and Brazil, we have been party to contract manufacturing agreements with parties in other production locations around the world, including Europe. The use of GMM technology is regulated in the European Union, which has established various directives for member states regarding regulation of the use of such technology, including notification processes for contained use of such technology. We expect to encounter GMM regulations in most, if not all, of the countries in which we may seek to establish production capabilities and/or conduct sales to customers or end-use consumers, and the scope and nature of these regulations will likely be different from country to country. If we cannot meet the applicable regulatory requirements in the countries in which we produce or sell, or intend to produce or sell, products using our yeast strains, or if it takes longer than anticipated to obtain the necessary regulatory approvals, our business could be materially affected. Furthermore, there are various governmental, non-governmental and quasi-governmental organizations that review and certify products with respect to the determination of whether products can be classified as "natural" or other similar classifications. While the certification from such governmental organizations, and verification from non-governmental and quasi-governmental organizations are

generally not mandatory, some of our current or prospective customers, collaboration partners or distributors may require that we meet the standards set by such organizations as a condition precedent to purchasing or distributing our products. We cannot be certain that we will be able to satisfy the standards of such organizations, and any delay or failure to do so could harm our ability to sell or distribute some or all of our products to certain customers and prospective customers, which could have a negative impact on our business.

We may not be able to obtain regulatory approval for the sale of our renewable products.

Our renewable chemical products may be subject to government regulation in our target markets. In the United States, the EPA administers the Toxic Substances Control Act (the TSCA), which regulates the commercial registration, distribution, and use of many chemicals. Before an entity can manufacture or distribute a new chemical subject to the TSCA, it must file a Pre-Manufacture Notice, or PMN, to add the chemical to a product. The EPA has 180 days to review the filing but may request additional data, which could significantly extend the timeline for approval. As a result, we may not receive EPA approval to list future molecules on the TSCA registry as expeditiously as we would like, resulting in delays or significant increases in testing requirements. A similar program exists in the European Union, called REACH. Under this program, chemicals imported or manufactured in the European Union in certain quantities must be registered with the European Chemicals Agency, and this process could cause delays or entail significant costs. To the extent that other countries in which we are producing or selling (or seeking to produce or sell) our products, such as Brazil and various countries in Asia, rely on TSCA or REACH (or are implementing similar laws and programs) for chemical registration or regulation in their jurisdictions, delays with the U.S. or European authorities, or any relevant authorities in such other countries, may delay entry into these markets as well. In addition, some of our Biofene-derived products are sold for the cosmetics market, and some countries may impose additional regulatory requirements or permits for such uses, which could impair, delay or prevent sales of our products in those markets. Also, certain of our current or proposed products in the Flavor & Fragrance, Clean Beauty and Health & Wellness markets, including Flavor & Fragrance ingredients, skincare ingredients and cosmetic actives, alternative sweeteners and nutraceuticals, may be subject to the approval of and regulation by the FDA, the European Food Safety Authority, as well as similar agencies of states and foreign jurisdictions where these products are sold or proposed to be sold.

We expect to encounter regulations in most, if not all, of the countries in which we may seek to produce, import or sell our products (and our customers may encounter similar regulations in selling end-use products to consumers), and we cannot assure you that we (or our customers) will be able to obtain necessary approvals and third-party verifications in a timely manner or at all. If our products do not meet applicable regulatory requirements in a particular country, then we (or our customers) may not be able to commercialize our products in such country and our business will be adversely affected. In addition, any enforcement action taken by regulators against us or our products could cause us to suffer adverse publicity, which could harm our reputation and our relationship with our customers and vendors.

In addition, many of our products are intended to be a component of our collaboration partners' and/or customers' (or their customers') end-use products. Such end-use products may be subject to various regulations, including regulations promulgated by the EPA, the FDA, or the European Food Safety Authority. If we or our collaboration partners and customers (or their customers) are not successful in obtaining any required regulatory approval or third-party verifications for their end-use products that incorporate our products or fail to comply with any applicable regulations for such end-use products, whether due to our products or otherwise, demand for our products may decline and our revenues could be materially adversely affected.

Changes in government regulations, including subsidies and economic incentives, could have a material adverse effect on our business.

The markets where we sell our products are heavily influenced by foreign, federal, state and local government regulations and policies. Changes to existing or adoption of new foreign or domestic federal, state and local

legislative initiatives that impact the production, distribution or sale of products may harm our business. The uncertainty regarding future standards and policies, including developing legislation in the Clean Beauty industry, may also affect our ability to develop our products or to license our technologies to third parties and to sell products to our end customers. Any inability to address these requirements and any regulatory or policy changes could have a material adverse effect on our business, financial condition, results of operations and growth prospects.

Furthermore, the production of our products will depend on the availability of feedstock, especially sugarcane. Agricultural production and trade flows are subject to government policies and regulations. Governmental policies affecting the agricultural industry, such as taxes, tariffs, duties, subsidies, incentives and import and export restrictions on agricultural commodities and commodity products can influence the planting of certain crops, the location and size of crop production, whether unprocessed or processed commodity products are traded, the volume and types of imports and exports, and the availability and competitiveness of feedstocks as raw materials. Future government policies may adversely affect the supply of feedstocks, restrict our ability to use sugarcane or other feedstocks to produce our products, or encourage the use of feedstocks more advantageous to our competitors, which would put us at a commercial disadvantage and could negatively impact our business, financial condition, and results of operations.

Our cannabinoid initiative is uncertain and may not yield commercial results and is subject to material regulatory risks.

In 2019, we announced a new collaboration arrangement with LAVVAN, Inc. (Lavvan) aimed at developing, producing and commercializing fermentation-derived cannabinoids. While we believe there are substantial business opportunities for us in this field, there can be no assurance that our activities will be successful, or that any research and development and product testing efforts will result in commercially saleable products, or that the market will accept or respond positively to our products. In September 2020, Lavvan filed a suit against us in the United States District Court for the Southern District of New York alleging certain breach of contract claims. If we fail in defending this claim, it could negatively impact our business, financial condition, results of operations and growth prospects.

In addition, the market for cannabinoids is heavily regulated. Synthetic cannabinoids may be viewed as controlled substances under the federal Controlled Substances Act of 1970 (CSA), and may be subject to a high degree of regulation including, among other things, certain registration, licensing, manufacturing, security, record keeping, reporting, import, export, clinical and non-clinical studies, insurance and other requirements administered by the U.S. Drug Enforcement Administration (DEA) and/or the FDA.

Individual states and countries have also established controlled substance laws and regulations, which may differ from U.S. federal law. We or our partners may be required to obtain separate state or country registrations, permits or licenses in order to be able to develop produce, sell, store and transport cannabinoids.

Complying with laws and regulations relating to cannabinoids is evolving, complex and expensive, and may divert management's attention and resources from other aspects of our business. Failure to maintain compliance with such laws and regulations may result in regulatory action that could have a material adverse effect on our business, financial condition, results of operations and growth prospects. The DEA, FDA or state agencies may seek civil penalties, refuse to renew necessary registrations, or initiate proceedings to revoke those registrations. In certain circumstances, violations could lead to criminal proceedings.

We may incur material costs to comply with environmental laws and regulations, and failure to comply with these laws and regulations could expose us to material liabilities.

We use intermediate substances, hazardous chemicals and radioactive and biological materials in our business, and such materials are subject to a variety of federal, state and local laws and regulations governing the use, generation, manufacture, storage, handling and disposal of these materials in the United States, Brazil and the

European Union. Although we have implemented safety procedures for handling and disposing of these materials and related waste products in an effort to comply with these laws and regulations, we cannot be sure that our safety measures and those of our contractors will prevent accidental injury or contamination from the use, storage, handling or disposal of hazardous materials. In the event of contamination or injury, we could be held liable for any resulting damages, and any liability could exceed our insurance coverage. There can be no assurance that violations of environmental, health and safety laws will not occur in the future as a result of human error, accident, equipment failure or other causes. Compliance with applicable environmental laws and regulations may be expensive, and the failure to comply with past, present, or future laws could result in the imposition of fines, third party property damage, product liability and personal injury claims, investigation and remediation costs, the suspension of production, or a cessation of operations, and our liability may exceed our total assets. Liability under environmental laws can be joint and several, without regard to comparative fault, and may be punitive in nature. Furthermore, environmental laws could become more stringent over time, imposing greater compliance costs and increasing risks and penalties associated with violations, which could impair our research, development or production efforts and otherwise harm our business.

Our proprietary rights may not adequately protect our technologies and product candidates.

Our commercial success will depend substantially on our ability to obtain patents and maintain adequate legal protection for our technologies and product candidates in the United States and other countries. As of December 31, 2020, we had 695 issued U.S. and foreign patents and 220 pending U.S. and foreign patent applications that were owned or co-owned by or licensed to us. We will be able to protect our proprietary rights from unauthorized use by third parties only to the extent that our proprietary technologies and future products are covered by valid and enforceable patents or are effectively maintained as trade secrets.

We apply for patents covering both our technologies and product candidates, as we deem appropriate. However, filing, prosecuting, maintaining and defending patents on product candidates in all countries throughout the world would be prohibitively expensive, and our intellectual property rights in some countries outside the United States are less extensive than those in the United States. We may also fail to apply for patents on important technologies or product candidates in a timely fashion, or at all. Our existing and future patents may not be sufficiently broad to prevent others from practicing our technologies or from designing products around our patents or otherwise developing competing products or technologies. In addition, the patent positions of companies like ours are highly uncertain and involve complex legal and factual questions for which important legal principles remain unresolved. No consistent policy regarding the breadth of patent claims has emerged to date in the United States. Additional uncertainty may result from legal decisions by the United States Federal Circuit and Supreme Court as they determine legal issues concerning the scope and construction of patent claims and inconsistent interpretation of patent laws or from legislation enacted by the U.S. Congress. The patent situation outside of the United States is also difficult to predict. As a result, the validity and enforceability of patents cannot be predicted with certainty. Moreover, we cannot be certain whether:

- we (or our licensors) were the first to make the inventions covered by each of our issued patents and pending patent applications;
- we (or our licensors) were the first to file patent applications for these inventions;
- others will independently develop similar or alternative technologies or duplicate any of our technologies;
- any of our or our licensors' patents will be valid or enforceable;
- any patents issued to us (or our licensors) will provide us with any competitive advantages, or will be challenged by third parties;
- we will be able to identify when others are infringing our (or our licensed) valid patent claims;
- others will claim we are infringing on their patent claims;
- we will develop additional proprietary products or technologies that are patentable; or
- the patents of others will have a material adverse effect on our business.

We do not know whether any of our pending patent applications or those pending patent applications that we license will result in the issuance of any patents. Even if patents are issued, they may not be sufficient to protect our technology or product candidates. Accordingly, even if issued, we cannot predict the breadth, validity and enforceability of the claims upheld in our and other companies' patents. The patents we own or license and those that may be issued in the future may be challenged, invalidated, rendered unenforceable, or circumvented, and the rights granted under any issued patents may not provide us with proprietary protection or competitive advantages. Moreover, third parties could practice our inventions in territories where we do not have patent protection or in territories where they could obtain a compulsory license to our technology where patented. Such third parties may then try to import products made using our inventions into the United States or other territories.

Many companies have encountered significant problems in protecting and defending intellectual property rights in foreign jurisdictions. The legal systems of certain countries do not favor the enforcement of patents or other intellectual property rights, which could hinder us from preventing the infringement of our patents or other intellectual property rights. Proceedings to enforce our patent rights in the United States or foreign jurisdictions could result in substantial costs and divert our efforts and attention from other aspects of our business, could put our patents at risk of being invalidated or interpreted narrowly and our patent applications at risk of not issuing and could provoke third parties to assert patent infringement or other claims against us. We may not prevail in any lawsuits that we initiate, and the damages or other remedies awarded, if any, may not be commercially meaningful. Accordingly, our efforts to enforce our intellectual property rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property that we develop or license from third parties.

Moreover, we have granted certain of our lenders liens on substantially all of our assets, including our intellectual property, as collateral. If we default on our payment obligations under these secured loans, such lenders have the right to foreclose upon and control the disposition of our assets, including our intellectual property assets, to satisfy our payment obligations under such instruments. If such default occurs, and our intellectual property assets are sold or licensed, our business could be materially adversely affected.

Unauthorized parties may attempt to copy or otherwise obtain and use our products or technology. 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 technology, particularly in certain foreign countries where the local laws may not protect our proprietary rights as fully as in the United States or may provide, today or in the future, for compulsory licenses. Moreover, in some cases our ability to determine if our intellectual property is being unlawfully used by a competitor may be limited. If competitors are able to use our technology, our 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 cause harm to our business.

We rely in part on trade secrets to protect our technology, and our failure to obtain or maintain trade secret protection could adversely affect our competitive business position.

We rely on trade secrets to protect some of our technology, particularly where we do not believe patent protection is appropriate or obtainable. However, trade secrets are difficult to maintain and protect. Our strategy for contract manufacturing and scale-up of commercial production requires us to share confidential information with our international business partners and other parties. Our product development collaborations with third parties, including with Givaudan, Firmenich, DSM and Yifan, require us to share certain confidential information. While we use reasonable efforts to protect our trade secrets, our or our business partners' employees, consultants, contractors or scientific and other advisors may unintentionally or willfully disclose our proprietary information to competitors. Enforcement of claims that a third party has illegally obtained and is using trade secrets is expensive, time consuming, and uncertain. In addition, foreign courts are sometimes less willing than U.S. courts to protect

trade secrets. If our competitors lawfully obtain or independently develop equivalent knowledge, methods, and know-how, we would not be able to assert our trade secrets against them.

We require new employees and consultants to execute proprietary information and inventions agreements upon the commencement of an employment or consulting arrangement with us. We additionally require contractors, advisors, corporate collaboration partners, outside scientific collaboration partners, and other third parties that may receive trade secret information to execute such agreements or confidentiality agreements. 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 be 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, or these agreements may be unenforceable or difficult to enforce. If any of our trade secrets were to be lawfully obtained or independently developed by a competitor, we would have no right to prevent such third party, or those to whom they communicate such technology or information, from using that technology or information to compete with us. Additionally, trade secret law in Brazil differs from that in the United States, which requires us to take a different approach to protecting our trade secrets in Brazil. Some of these approaches to trade secret protection may be novel and untested under Brazilian law, and we cannot guarantee that we would prevail if our trade secrets are contested in Brazil. If any of the above risks materializes, our failure to obtain or maintain trade secret protection could materially adversely affect our competitive business position.

Third parties and former employees may misappropriate our trade secrets including those embodied in our yeast strains.

Third parties, including collaboration partners, contract manufacturers, other contractors, and shipping agents, as well as exiting employees, often have access to our trade secrets and custody or control of our yeast strains. If our trade secrets or yeast strains were stolen, misappropriated, or reverse engineered, they could be used by other parties who may be able to reproduce the yeast strains for their own commercial gain. If this were to occur, it would be difficult for us to challenge and prevent this type of use, especially in countries where we have limited intellectual property protection or that do not have robust intellectual property law regimes.

If we are, or one of our collaboration partners is, sued for infringing intellectual property rights or other proprietary rights of third parties, litigation could be costly and time consuming and could prevent us from developing or commercializing our future products.

Our commercial success depends on our and our collaboration partners' ability to operate without infringing the patents and proprietary rights of other parties and without breaching any agreements we have entered into with regard to our technologies and product candidates. We cannot determine with certainty whether patents or patent applications of other parties may materially affect our ability to conduct our business. Our industry spans several sectors, including biotechnology, renewable fuels, renewable specialty chemicals, and other renewable molecules, and is characterized by the existence of a significant number of patents and disputes regarding patent and other intellectual property rights. Because patent applications remain unpublished and confidential for eighteen months and can take several years to issue, there may currently be pending applications, unknown to us, that may result in issued patents that cover our technologies or product candidates. There may be a significant number of patents and patent applications relating to aspects of our technologies filed by, and issued to, third parties. The existence of third-party patent applications and patents could significantly reduce the coverage of patents owned by or licensed to us and our collaboration partners and limit our ability to obtain meaningful patent protection. If we wish to make, use, sell, offer to sell, or import the technology or compound claimed in issued and unexpired patents owned by others, we may need to obtain a license from the owner, develop or obtain alternative technologies, enter into litigation to challenge the validity of the patents, or incur the risk of litigation in the event that the owner asserts that we infringe its patents. If patents containing competitive or conflicting claims are issued to third

parties and these claims are ultimately determined to be valid, we and our collaboration partners may be enjoined from pursing research, development, or commercialization of products, or be required to obtain licenses to these patents, or to develop or obtain alternative technologies.

If a third party asserts that we infringe upon its patents or other proprietary rights, we could face a number of issues that could materially harm our competitive position, including:

- infringement and other intellectual property claims, which could be costly and time-consuming to litigate, whether or not the claims have merit, and which could prevent or delay getting our products to market and divert management time and attention from our business;
- substantial damages for past infringement, which we may have to pay if a court determines that our products or technologies infringe a third party's patent or other proprietary rights;
- a court prohibiting us from selling or licensing our technologies or future products unless the holder licenses the patent or other proprietary rights to us, which it is not required to do;
- the International Trade Commission (ITC) prohibiting us from importing our products into the United States; and
- if a license is available from a third party, such third party may require us to pay substantial royalties or grant cross licenses to our patents or proprietary rights.

The industries in which we operate, and the biotechnology industry in particular, are characterized by frequent and extensive litigation and patent agency procedures regarding patents and other intellectual property rights. Many biotechnology companies have employed intellectual property litigation as a way to gain a competitive advantage. If any of our competitors have filed patent applications or obtained patents that claim inventions also claimed by us, we may have to participate in interference proceedings declared by the relevant patent regulatory agency to determine priority of invention and, thus, the right to the patents for these inventions in the United States. In addition, third parties may be able to challenge the validity of one or more of our patents using available post-grant procedures including oppositions and *inter partes* reviews. These proceedings could result in substantial cost to us even if the outcome is favorable. Even if successful, an interference or post-grant proceeding may result in loss of certain of our patent claims. Our involvement in litigation, interferences, opposition proceedings or other intellectual property proceedings inside and outside of the United States, to defend our intellectual property rights, or as a result of alleged infringement of the rights of others, may divert management time and attention to business operations and could cause us to spend significant resources, all of which could harm our business and results of operations.

Many of our employees were previously employed at universities, biotechnology, specialty chemical companies, including our competitors or potential competitors. We may be subject to claims that these employees have inadvertently or otherwise used or disclosed trade secrets or other proprietary information of their former employers. Litigation may be necessary to defend against these claims. If we fail in defending such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights or personnel and be enjoined from certain activities. A loss of key research personnel or their work product, especially to our competitors or potential competitors, could hamper or prevent our ability to commercialize our product candidates, which could materially harm our business. Even if we are successful in prosecuting or defending against these claims, litigation could result in substantial costs and demand on management resources.

We may need to commence litigation to enforce our intellectual property rights, which would divert resources and management's time and attention, and the results of which would be uncertain.

Our commercial success depends in part on obtaining, maintaining and defending intellectual property protection for our products and assets. Enforcement of our intellectual property rights may require us to bring claims against third parties that are using our proprietary rights without permission, and such process is expensive, time-consuming, and uncertain. Significant litigation would result in substantial costs, even if the eventual outcome is

favorable to us, and would divert management's attention from our business objectives. In addition, an adverse outcome in litigation could result in a substantial loss of our proprietary rights, and we may lose our ability to exclude others from practicing our technology or producing our product candidates.

Patent enforcement generally must be sought on a country-by-country basis, and the laws of some foreign countries do not protect intellectual property rights to the same extent as do the laws of the United States. Many companies have encountered significant problems in protecting and defending intellectual property rights in certain foreign jurisdictions. The legal systems of certain countries, particularly certain developing countries, do not favor the enforcement of patents by foreign holders and other intellectual property protection, particularly those relating to biotechnology and/or bioindustrial technologies. This could make it difficult for us to stop the infringement of our patents or misappropriation of our other intellectual property rights. Proceedings to enforce our patent rights in foreign jurisdictions could result in substantial costs and divert our efforts and attention from other aspects of our business. Moreover, our efforts to protect our intellectual property rights in such countries may be inadequate.

We do not have exclusive rights to intellectual property we develop under U.S. federally funded research grants and contracts, including with DARPA and DOE, and we could ultimately share or lose the rights we do have under certain circumstances.

Some of our intellectual property rights have been or may be developed in the course of research funded by the U.S. government, including under our agreements with DARPA and DOE. As a result, the U.S. government may have certain rights to intellectual property embodied in our current or future products pursuant to the Bayh-Dole Act of 1980. Government rights in certain inventions developed under a government-funded program include a non-exclusive, non-transferable, irrevocable worldwide license to use inventions for any governmental purpose. In addition, the U.S. government has the right to require us, or an assignee or exclusive licensee to such inventions, to grant licenses to any of these inventions to a third party if the U.S. government determines that: (i) adequate steps have not been taken to commercialize the invention; (ii) government action is necessary to meet public health or safety needs; (iii) government action is necessary to meet requirements for public use under federal regulations; or (iv) the right to use or sell such inventions is exclusively licensed to an entity within the U.S. and substantially manufactured outside the United States without the U.S. government's prior approval. Additionally, we may be restricted from granting exclusive licenses for the right to use or sell our inventions created pursuant to such agreements unless the licensee agrees to additional restrictions (e.g., manufacturing substantially all of the invention in the United States). The U.S. government also has the right to take title to these inventions if we fail to disclose the invention to the government and fail to file an application to register the intellectual property within specified time limits. In addition, the U.S. government may acquire title in any country in which a patent application is not filed within specified time limits. Additionally, certain inventions are subject to transfer restrictions during the term of these agreements and for a period thereafter, including sales of products or components, transfers to foreign subsidiaries for the purpose of the relevant agreements, and transfers to certain foreign third parties. If any of our intellectual property becomes subject to any of the rights or remedies available to the U.S. government or third parties pursuant to the Bayh-Dole Act of 1980, this could impair the value of our intellectual property and could adversely affect our business.

Our products subject us to product safety risks, and we may be sued for product liability.

The design, development, production and sale of our products involve an inherent risk of product liability claims and the associated adverse publicity. Our products could be used by a wide variety of consumers with varying levels of sophistication. Although safety is a priority for us, we are not always in control of the final uses and formulations of the products we supply or their use as ingredients. Our products could have detrimental impacts or adverse impacts we cannot anticipate. Despite our efforts, negative publicity about the Company, including product safety or similar concerns, whether real or perceived, could occur, and our products could face withdrawal, recall or other quality issues. In addition, we may be named directly in product liability suits relating to

our products, even for defects resulting from errors of our commercial partners, contract manufacturers, chemical finishers, customers or end users of our products. These claims could be brought by various parties, including customers who are purchasing products directly from us or other users who purchase products from our customers. We could also be named as co-parties in product liability suits that are brought against the contract manufacturers with whom we partner to produce our products. Insurance coverage is expensive, may be difficult to obtain and may not be available in the future on acceptable terms. Any insurance we do maintain may not provide adequate coverage against potential losses, and if claims or losses exceed our liability insurance coverage, our business would be adversely impacted. In addition, insurance coverage may become more expensive, which would harm our results of operations.

We may become subject to lawsuits or indemnity claims in the ordinary course of business, which could materially and adversely affect our business and results of operations.

From time to time, we may in the ordinary course of business be named as a defendant in lawsuits, indemnity claims and other legal proceedings. These actions may seek, among other things, compensation for alleged personal injury, employment discrimination, breach of contract, property damage and other losses or injunctive or declaratory relief. In the event that such actions, claims or proceedings are ultimately resolved unfavorably to us at amounts exceeding our accrued liability, or at material amounts, the outcome could materially and adversely affect our reputation, business, financial condition, results of operations and growth prospects. In addition, payments of significant amounts, even if reserved, could adversely affect our liquidity position. For more information regarding our current legal proceedings, please refer to the section entitled "Legal Proceedings" in Part I, Item 3 of this Annual Report on Form 10-K.

Risks Related to Ownership of Our Common Stock

Our stock price has been, and may continue to be, volatile.

The market price of our common stock has been, and may continue to be, subject to material volatility. Such fluctuations could be in response to, among other things, the factors described in this "Risk Factors" section, or other factors, some of which are beyond our control, such as:

- the ongoing impacts of the COVID-19 pandemic and resulting impact on stock market performance;
- fluctuations in our financial results or outlook or those of companies perceived to be similar to us;
- changes in estimates of our financial results or recommendations by securities analysts;
- changes in the prices of commodities associated with our business such as sugar and petroleum or changes in the prices of commodities that some of our products may replace, such as oil and other petroleum sourced products;
- changes in our capital structure, such as future issuances of securities or the incurrence of debt;
- announcements by us or our competitors of significant contracts, acquisitions or strategic partnerships;
- regulatory developments in the United States, Brazil, and/or other foreign countries;
- litigation involving us, our general industry or both;
- additions or departures of key personnel;
- investors' general perception of us; and
- changes in general economic, industry and market conditions.

Furthermore, stock markets have experienced price and volume fluctuations that have affected, and continue to affect, the market prices of equity securities of many companies. These fluctuations often have been unrelated or disproportionate to the operating performance of those companies. These broad market fluctuations, as well as general economic, political and market conditions, such as recessions, interest rate changes and international currency fluctuations, may negatively affect the market price of our common stock.

In the past, many companies that have experienced volatility and sustained declines in the market price of their stock have become subject to securities class action and derivative action litigation. We have been involved in four such lawsuits that were dismissed in September 2017, July 2018 and September 2018, and were involved in one such lawsuit that was resolved in December 2020. We are currently defending two such lawsuits, as described in more detail below under "Legal Proceedings," and we may be the target of this type of litigation in the future. Securities litigation against us could result in substantial costs and divert our management's attention from other business concerns, which could materially harm our business. Any insurance we maintain may not provide adequate coverage against potential losses such securities litigation, and if claims or losses exceed our liability insurance coverage, our business would be adversely impacted. In addition, insurance coverage may become more expensive, which would harm our results of operations.

The concentration of our capital stock ownership and certain rights we have granted to insiders will limit the ability of other stockholders to influence corporate matters and presents risks related to our future securities offerings, which could substantially impact our business.

As of December 31, 2020, over 50% of our capital stock was beneficially owned by five significant stockholders, including Foris Ventures, LLC (Foris), FMR LLC, DSM, Vivo Capital LLC (Vivo), and Farallon Capital. Furthermore, most of these parties and other insider stockholders holds some or a combination of convertible preferred stock, warrants and purchase rights, pursuant to which they may acquire additional shares of our common stock and thereby increase their ownership interest in the Company. Additionally, Foris is indirectly owned by John Doerr, one of our current directors, and each of DSM and Vivo have one or more directors on our Board of Directors pursuant to designation rights under their respective agreements with the Company. This significant concentration of share ownership may adversely affect the trading price of our common stock because investors often perceive disadvantages in owning stock in companies with stockholders with significant interests. Also, these stockholders, acting together, may be able to control or materially influence our management and affairs and matters requiring stockholder approval, including the election of directors and the approval of significant corporate transactions such as mergers, consolidations or the sale of all or substantially all of our assets, and may not act in the best interests of our other stockholders. Consequently, this concentration of ownership may have the effect of delaying or preventing a change of control, or a change in our management or Board of Directors, or discouraging a potential acquirer from making a tender offer or otherwise attempting to obtain control of the Company, even if such actions would benefit our other stockholders.

In May 2017, we entered into an agreement with DSM, which was amended and restated in August 2017, pursuant to which we agreed (i) that for as long as there is a DSM-designated director serving on our Board of Directors, we will not engage in certain commercial or financial transactions or arrangements without the consent of such director, and (ii) to provide DSM with certain exclusive negotiating rights in connection with certain future commercial projects and arrangements. These provisions could discourage other potential partners from approaching us with business opportunities, and could restrict, delay or prevent us from pursuing or engaging in such opportunities, which could adversely affect our business.

Additionally, in connection with their investments in the Company, we granted certain investors, including DSM and Vivo, a right of first investment if we propose to sell securities in certain financing transactions. With these rights, such investors may subscribe for a portion of any such new financing and require us to comply with certain notice periods, which could discourage other investors from participating in, or cause delays in our ability to close, such a financing.

While we have a related-party transactions policy that requires certain approvals of any transaction between the Company and a significant stockholder or its affiliates, there can be no assurance that our significant stockholders will act in the best interests of our other stockholders, which could harm our results of operations and cause our stock price to decline.

Future sales and issuances of our common stock, convertible securities, warrants or rights to purchase common stock could result in additional dilution of the percentage ownership of our stockholders and could cause our stock price to decline.

From time to time, we have sold a substantial number of warrants and rights to acquire our common stock as well as convertible securities, which, if exercised, purchased or converted, result in dilution to our stockholders. In the future, we may sell additional warrants, rights, convertible or exchangeable securities or other equity securities in one or more transactions at prices and in a manner we determine from time to time, to finance our business operations and investments. To the extent we raise capital by issuing equity securities, our stockholders may experience substantial dilution.

If our existing stockholders, particularly our largest stockholders, our directors, their affiliates, or our executive officers, sell a substantial number of shares of our common stock in the public market, the market price of our common stock could decrease materially. The perception in the public market that these stockholders might sell our common stock could also depress the market price of our common stock and could impair our future ability to obtain capital, especially through an offering of equity securities.

We have in place, or have agreed to file, registration statements for the resale of certain shares of our common stock held by, or issuable to, certain of our largest stockholders. All of our common stock sold pursuant to an offering covered by such registration statements will be freely transferable. In addition, shares of our common stock issued or issuable under our equity incentive plans to employees and directors have been registered on Form S-8 registration statements and may be freely sold in the public market upon issuance, except for shares held by affiliates who have certain restrictions on their ability to sell.

We are subject to new U.S. foreign investment regulations which may impose additional burdens on or may limit certain investors' ability to purchase our common stock, potentially making our common stock less attractive to investors.

The U.S. Department of Treasury implemented part of the Foreign Investment Risk Review Modernization Act (FIRRMA) on November 10, 2018. The FIRRMA program expands the jurisdiction of the Committee on Foreign Investment in the United States (CFIUS), to include certain direct or indirect foreign investments in a defined category of U.S. companies, including companies involved in critical infrastructure and critical technologies. Among other things, FIRRMA empowers CFIUS to require certain mandatory filings in connection with certain foreign investments in U.S. companies and permits CFIUS to charge filing fees related to such filings. Such filings are subject to review by CFIUS, which will have the authority to recommend that the U.S. President block or impose conditions on certain foreign investments in companies subject to CFIUS's oversight. Any such restrictions on the ability of foreign investors to invest in the Company could limit our ability to engage in strategic transactions that may benefit our stockholders, including a change of control, and may prevent our stockholders from receiving a premium for their shares of our common stock in connection with a change of control, and could also affect the price that some investors are willing to pay for our common stock.

If securities or industry analysts do not publish or cease publishing research or reports about us, our business or our market, or if they change their recommendations regarding our stock adversely, our stock price and trading volume could decline.

The trading market for our common stock will be influenced by the research and reports that industry or securities analysts may publish about us, our business, our market or our competitors. If any of the analysts who cover the Company change their recommendation regarding our stock adversely, or provide more favorable relative recommendations about our competitors, our stock price would likely decline. If any analyst who may cover the Company were to cease coverage of our stock or fail to regularly publish reports on the Company, we could lose visibility in the financial markets, which in turn could cause our stock price or trading volume to decline.

We do not expect to declare any cash dividends in the foreseeable future.

We do not anticipate declaring any cash dividends to holders of our common stock in the foreseeable future. In addition, certain of our equipment leases and credit facilities currently restrict our ability to pay dividends. Consequently, investors may need to rely on sales of their shares of our common stock after price appreciation, which may never occur, as the only way to realize any future gains on their investment. Investors seeking cash dividends should not purchase our common stock.

Anti-takeover provisions contained in our Certificate of Incorporation and Bylaws, as well as provisions of Delaware law, could impair a takeover attempt.

Our Certificate of Incorporation and Bylaws contain provisions that could delay or prevent a change in control. These provisions could also make it more difficult for stockholders to nominate directors and take other corporate actions. These provisions include:

- a staggered Board of Directors;
- authorizing the Board of Directors to issue, without stockholder approval, preferred stock with rights senior to those of our common stock;
- authorizing the Board of Directors to amend our Bylaws, to increase the number of directors and to fill board vacancies until the end of the term of the applicable class of directors;
- prohibiting stockholder action by written consent;
- limiting the liability of, and providing indemnification to, our directors and officers;
- eliminating the ability of our stockholders to call special meetings; and
- requiring advance notification of stockholder nominations and proposals.

Section 203 of the Delaware General Corporation Law (the "DGCL") prohibits, subject to some exceptions, "business combinations" between a Delaware corporation and an "interested stockholder," which is generally defined as a stockholder who becomes a beneficial owner of 15% or more of a Delaware corporation's voting stock, for a three-year period following the date that the stockholder became an interested stockholder. While we have agreed to opt out of Section 203 through our Certificate of Incorporation, our Certificate of Incorporation contains substantially similar protections to the Company and stockholders as those afforded under Section 203.

These and other provisions in our Certificate of Incorporation and our Bylaws could discourage potential takeover attempts, reduce the price that investors are willing to pay in the future for shares of our common stock and result in the market price of our common stock being lower than it would be without these provisions.

The exclusive forum provisions in our restated Bylaws may limit a stockholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with us or any of our directors, officers, or other employees, which may discourage lawsuits with respect to such claims.

In November 2020, we amended our restated Bylaws to provide that, to the fullest extent permitted by law, the Court of Chancery of the State of Delaware will be the exclusive forum for any derivative action or proceeding brought on our behalf; any action asserting a breach of fiduciary duty; any action asserting a claim against us arising pursuant to the DGCL, our certificate of incorporation, or our restated Bylaws; or any action asserting a claim against us that is governed by the internal affairs doctrine. Our restated bylaws further provide that the U.S. federal district courts will, to the fullest extent permitted by law, be the exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act, or a Federal Forum Provision. Our decision to adopt a Federal Forum Provision followed a decision by the Supreme Court of the State of Delaware holding that such provisions are facially valid under Delaware law. While there can be no assurance that federal or state courts will follow the holding of the Delaware Supreme Court or determine that the Federal Forum Provision

should be enforced in a particular case, application of the Federal Forum Provision means that suits brought by our stockholders to enforce any duty or liability created by the Securities Act must be brought in federal court and cannot be brought in state court.

These choice of forum provisions may limit a stockholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with us or any of our directors, officers, or other employees, which may discourage lawsuits with respect to such claims. Alternatively, if a court were to find the choice of forum provisions contained in our Certificate of Incorporation or restated 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, financial condition and results of operations. In addition, Section 203 of the DGCL may discourage, delay or prevent a change in control of our company. Section 203 imposes certain restrictions on mergers, business combinations and other transactions between us and holders of 15% or more of our common stock.

General Risks

We may not be able to fully enforce covenants not to compete with and not to solicit our employees, and therefore we may be unable to prevent our competitors from benefiting from the expertise of such employees.

Our proprietary information and inventions agreements with our employees contain non-compete and non-solicitation provisions. These provisions prohibit our employees from competing directly with our business or proposed business or working for our competitors during their term of employment, and from directly or indirectly soliciting our employees or consultants to leave us for any purpose. Under applicable U.S. and Brazilian law, we may be unable to enforce these provisions. If we cannot enforce these provisions with our employees, we may be unable to prevent our competitors from benefiting from the expertise of such employees. Even if these provisions are enforceable, they may not adequately protect our interests. The defection of one or more of our employees to a competitor could materially adversely affect our business, results of operations and ability to capitalize on our proprietary information.

Loss of key personnel, including key management personnel and key members of our research and development programs, and/or failure to attract and retain additional personnel could delay our product development programs and harm our research and development efforts and our ability to meet our business objectives.

Our business involves complex, global operations across a variety of markets and requires a management team and employee workforce that are knowledgeable in the many areas in which we operate. As we continue to build our business, we will need to hire and retain qualified research and development, management, and other personnel to succeed. The process of hiring, training, and successfully integrating qualified personnel into our operations in the United States, Brazil, and other countries in which we may seek to operate, can be lengthy and expensive. The market for qualified personnel is very competitive because of the limited number of people available who have the necessary technical skills and understanding of our technology and products. Our failure to hire and retain qualified personnel could impair our ability to meet our research and development and business objectives and adversely affect our results of operations and financial condition.

The loss of any key member of our management or any key technical and operational employee, or the failure to attract or retain such employees, could prevent us from developing and commercializing our products for our target markets and executing our business strategy. In addition, we may not be able to attract or retain qualified employees in the future due to the intense competition for qualified personnel among biotechnology and other technology-based businesses. Furthermore, any reductions to our workforce as part of potential cost-saving measures, such as those discussed above with respect to our planned actions to continue as a going concern,

may make it more difficult for us to attract and retain key employees. If we do not maintain the necessary personnel to accomplish our business objectives, we may experience staffing constraints that will adversely affect our ability to meet the demands of our collaboration partners and customers in a timely fashion or to support our internal research and development programs and operations. In particular, our product and process development programs depend on our ability to attract and retain highly skilled technical and operational personnel. Competition for such personnel from numerous companies and academic and other research institutions may limit our ability to do so on acceptable terms. All of our U.S. employees are "at-will" employees, which means that either the employee or the Company may terminate the employee's employment at any time.

Our operations rely on sophisticated information technology and equipment systems, a disruption of which could harm our operations.

We rely on various information technology and equipment systems, some of which are dependent on services provided by third parties, to manage our technology platform and operations. These systems provide critical data and services for internal and external users, including research and development activities, procurement and inventory management, transaction processing, financial, commercial and operational data, partner and joint venture activities, human resources management, legal and tax compliance and other processes necessary to operate and manage our business. These systems are complex and are frequently updated as technology improves, and include software and hardware that is licensed, leased, or purchased from third parties. If our information technology and equipment systems experience breaches or other failures or disruptions, our systems and the information contained therein could be compromised. While we have implemented security measures and disaster recovery plans designed to mitigate the effects of any failures or disruption of these systems, such measures may not adequately prevent adverse events such as breaches or failures from occurring or mitigate their severity if they do occur. If our information technology or equipment systems are breached, damaged, or fail to function properly due to internal errors or defects, implementation or integration issues, catastrophic events, or power outages, we may experience a material disruption in our ability to manage our business operations. Failure or disruption of these systems could have a material adverse effect on our results of operations and financial condition.

Increased information systems security threats and more sophisticated, targeted computer invasions could pose a risk to our technology platform and operations.

Increased information systems security threats, cyber- or phishing-attacks and more sophisticated, targeted computer invasions pose a risk to the security of our systems and networks, and the confidentiality, availability, and integrity of our data, operations, and communications, and our exposure to such risks is enhanced in our remote work environment as a result of the COVID-19 pandemic. Cyber-attacks against our technology platform and infrastructure could result in exposure of confidential information, the modification of critical data, and/or the failure of critical operations. Likewise, improper or inadvertent employee behavior, including data privacy breaches by employees and others with permitted access to our systems may pose a risk that sensitive data may be exposed to unauthorized persons or to the public. While we attempt to mitigate these risks by employing a number of measures, including security measures, employee training, comprehensive monitoring of our networks and systems, maintenance of backup and protective systems, and incident response procedures, if these measures prove inadequate, we could be adversely affected by, among other things, loss or damage of intellectual property, proprietary and confidential information, data integrity, and communications or customer data, increased costs to prevent, respond to, or mitigate these cyber security threats and interruptions of our business operations.

Growth may place material demands on our management, our infrastructure, and our contract manufacturing relationships.

We have experienced, and expect to continue to experience, expansion of our business as we continue to make efforts to develop and bring our products to market. We have grown from approximately 300 employees at the

time of our initial public offering in 2010 to 595 full-time employees at December 31, 2020. Our growth and diversified operations have placed, and may continue to place, material demands on our management and our operational and financial infrastructure. In particular, continued growth could strain our ability to:

- manage multiple research and development programs;
- operate multiple manufacturing facilities around the world;
- develop and improve our operational, financial and management controls;
- enhance our reporting systems and procedures;
- recruit, train and retain highly skilled personnel;
- develop and maintain our relationships with existing and potential business partners including contract manufacturers;
- maintain our quality standards; and
- maintain customer satisfaction.

Managing our growth will require material expenditures and allocation of valuable management resources. If we fail to achieve the necessary level of efficiency in our organization as it grows, our business, financial condition, and results of operations would be adversely impacted.

Our headquarters and other facilities are located in active earthquake and tsunami or in active hurricane zones, and an earthquake, hurricane or other type of natural disaster affecting us or our suppliers could cause resource shortages, disrupt our business and harm our results of operations.

We conduct our primary research and development operations in the San Francisco Bay Area in an active earthquake and tsunami zone, and certain of our suppliers conduct their operations in the same region or in other locations that are susceptible to natural disasters. In addition, California and some of the locations where certain of our suppliers are located have experienced shortages of water, electric power and natural gas from time to time. The occurrence of a hurricane or associated flooding in the Wilmington, North Carolina area could cause damage to our facility located in Leland or result in localized extended outages of utilities or transportation systems. The occurrence of a natural disaster, such as an earthquake, hurricane, drought or flood, or localized extended outages of critical utilities or transportation systems, or any critical resource shortages, affecting us or our suppliers could cause a material interruption in our business, damage or destroy our facilities, production equipment or inventory or those of our suppliers and cause us to incur material costs or result in limitations on the availability of our raw materials, any of which could harm our business, financial condition and results of operations. The insurance we maintain against fires, earthquakes and other natural disasters may not be adequate to cover our losses in any particular case. Our facilities undergo annual loss control audits and both our Emeryville and Leland facilities have emergency actions plans outlining emergency response practices for these and other emergency scenarios. Training on emergency response is provided to all employees at hire and annually thereafter as a refresh.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

The following is a summary of our principal facilities as of December 31, 2020. We lease our principal office and research and development facilities located in Emeryville, California. We hold a 50% ownership interest in a manufacturing facility and related land located in Leland, North Carolina and lease a pilot plant and demonstration facility and related office and laboratory space located in Campinas, Brazil. Our lease agreements expire at various dates through the year 2031.

Location	Approximate Square Feet	Operations
U.S.		
Emeryville, California	136,000	Executive offices; research and development, administrative and pilot plant
Leland, North Carolina	19,400	Manufacturing (joint venture with Nikko)
BRAZIL		
Campinas, Brazil	44,000	Pilot plant, research and development and administrative

We believe that our current facilities are suitable and adequate to meet our needs and that suitable additional space will be available to accommodate the foreseeable expansion of our operations. Based on our anticipated volume requirements for 2021 and beyond, we will likely need to identify and secure access to additional production capacity in 2021 and beyond, which we plan to obtain by constructing a new facility in Brazil and by increasing our use of contract manufacturers, including our collaboration partner, DSM. We are currently making plans to secure such additional capacity.

Item 3. Legal Proceedings

For a description of our significant pending legal proceedings, please see Note 9, Commitments and Contingencies of the Notes to Consolidated Financial Statements included in Part II, Item 8 of this Annual Report on Form 10-K.

Item 4. Mine Safety Disclosures

Not applicable.

Part II

Item 5. Market for Registrant's Common Equity and Related Stockholder Matters

Market Information for Common Stock

Our common stock is traded on the Nasdaq Global Select Market under the symbol AMRS.

At February 28, 2021, there were 84 holders of record (not including beneficial holders of stock held in street names) of our common stock.

Dividend Policy

We have never declared or paid any cash dividend on our common stock. We intend to retain any future earnings and do not expect to pay cash dividends in the foreseeable future.

Recent Sales of Unregistered Equity Securities and Use of Proceeds

For information regarding unregistered sales of our equity securities during the two years ended December 31, 2020, see the financial statements included in Part II, Item 8 of this Annual Report on Form 10-K.

See Note 15, "Subsequent Events" in Part II, Item 8 of this Annual Report on Form 10-K for information regarding unregistered sales of our equity securities subsequent to December 31, 2020.

Securities Authorized for Issuance under Equity Compensation Plans

The following table shows certain information concerning our common stock reserved for issuance in connection with our 2005 Stock Option/Stock Issuance Plan, our 2010 Equity Incentive Plan, our 2020 Equity Incentive Plan and our 2010 Employee Stock Purchase Plan, all as of December 31, 2020:

Plan category	Number of securities to be issued upon exercise of outstanding options, warrants and rights	Weighted-average exercise price of outstanding options	Number of securities to be issued upon vesting of outstanding restricted stock units	Number of securities remaining available for future issuance under equity compensation plans(1)(2)
Equity compensation plans approved by security holders	6,502,096	$7.64	7,043,909	5,782,707
Equity compensation plans not approved by security holders	—	—	—	—
Total	6,502,096	$7.64	7,043,909	5,782,707

(1) Includes 5,287,852 shares reserved for future issuance under our 2020 Equity Incentive Plan and 494,855 shares reserved for future issuance under our 2010 Employee Stock Purchase Plan. No shares are reserved for future issuance under our 2005 Stock Option/Stock Issuance Plan other than shares issuable upon exercise of equity awards outstanding under such plan.

(2) Effective January 1, 2021, the number of shares available for future issuance under our 2020 Equity Incentive Plan is expected to be increased by up to 12,247,572 shares pursuant to the automatic increase provision contained in the 2020 Equity Incentive Plan and the number of shares available for future issuance under our 2010 Employee Stock Purchase Plan is expected to be increased by up to 40,527 shares, in each case pursuant to automatic increase provisions contained in the respective plans, as discussed in more detail below.

Our 2020 Equity Incentive Plan includes all shares of our common stock previously reserved but unissued under the 2010 Equity Incentive Plan and all shares of our common stock reserved for issuance under our 2005 Stock Option/Stock Issuance Plan immediately prior to our initial public offering that were not subject to outstanding grants as of the completion of such offering. In addition, any shares of our common stock (i) issuable upon exercise of stock options granted under our 2005 Stock Option/Stock Issuance Plan or under our 2010 Equity Incentive Plan that cease to be subject to such options and (ii) issued under our 2005 Stock Option/Stock Issuance Plan or under our 2010 Equity Incentive Plan that are forfeited or repurchased by us at the original issue price, will become part of our 2020 Equity Incentive Plan reserve.

The number of shares available for grant and issuance under our 2020 Equity Incentive Plan is increased on January 1 of each year during the term of the plan by an amount equal to the lesser of (1) five percent (5%) of our shares outstanding on the immediately preceding December 31 and (2) a number of shares as may be determined by our Board of Directors or the Leadership, Development, Inclusion, and Compensation Committee in their discretion. In addition, shares will again be available for grant and issuance under our 2020 Equity Incentive Plan that are:

- subject to issuance upon exercise of an option or stock appreciation right granted under our 2020 Equity Incentive Plan and that cease to be subject to such award for any reason other than the award's exercise;
- subject to an award granted under our 2020 Equity Incentive Plan and that are subsequently forfeited or repurchased by us at the original issue price;
- surrendered pursuant to an exchange program; or
- subject to an award granted under our 2020 Equity Incentive Plan that otherwise terminates without shares being issued.

The number of shares reserved for issuance under our 2010 Employee Stock Purchase Plan is increased on January 1 of each year during the term of the plan by an amount equal to the lesser of (1) one percent (1%) of our shares outstanding on the immediately preceding December 31 and (2) a number of shares as may be determined by our Board of Directors or the Leadership, Development, Inclusion, and Compensation Committee of the Board in their discretion, provided that the aggregate number of shares issued over the term of our 2010 Employee Stock Purchase Plan shall not exceed 1,666,666 shares.

For more information regarding our 2020 Equity Incentive Plan and 2010 Employee Stock Purchase Plan, see Note 12, "Stock-based Compensation" in Part II, Item 8 of this Annual Report on Form 10-K.

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

Overview

As a leading synthetic biotechnology company active in the Clean Health and Beauty markets through our consumer brands and a top supplier of sustainable and natural ingredients, we apply our proprietary Lab-to-Market biotechnology platform to engineer, manufacture and market high performance, natural and sustainably sourced products. We do so with the use of computational tools, strain construction tools, screening and analytics tools,

and advanced lab automation and data integration. Our biotechnology platform enables us to rapidly engineer microbes and use them as catalysts to metabolize renewable, plant-sourced sugars into high-value ingredients that we manufacture at industrial scale. Through the combination of our biotechnology platform and our industrial fermentation process, we have successfully developed, produced and commercialized thirteen distinct molecules used in formulations by thousands of leading global brands.

We believe that synthetic biology represents a third industrial revolution, bringing together biology and engineering to generate new, more sustainable materials to meet the growing global demand for bio-based replacements of petroleum-based and traditional animal- or plant-derived ingredients. We continue to generate demand for our current portfolio of products through an extensive go-to-market network provided by our partners that are the leading companies in our target markets. Via our partnership model, our partners invest in the development of molecules to take it from the lab to commercial scale and use their extensive marketing and sales capabilities to sell our ingredients and formulations to their customers. We capture long-term revenue both through the production and sale of our molecules to our partners and through royalty revenues from our partners' product sales to their customers. We have also successfully formulated our unique, natural and sustainably-sourced ingredients into wholly-owned consumer brands, including Biossance® our clean beauty skincare brand, Pipette®, our baby and mother care brand, and Purecane™, our alternative sweetener brand. We are marketing our brands directly to consumers via our ecommerce platforms, in brick-and-mortar stores, and online via various retail partners.

We were founded in 2003 in the San Francisco Bay area by a group of scientists from the University of California, Berkeley. Through a grant in 2005 from the Bill & Melinda Gates Foundation, we developed technology capable of creating microbial strains that produce artemisinic acid, a precursor of artemisinin, an anti-malarial drug.

We produced a renewable farnesene brand, Biofene®, a long-chain, branched hydrocarbon molecule that we manufacture through fermentation using engineered microbes. Our farnesene derivatives are sold in hundreds of products as nutraceuticals, skincare products, fragrances, solvents, polymers, and lubricant ingredients. In 2014, we began manufacturing additional molecules for the Flavor & Fragrance industry; in 2015, we began investing to expand our capabilities to other small molecule chemical classes via our collaboration with the Defense Advanced Research Projects Agency (DARPA); and in 2016, we expanded into proteins. We then made the strategic decision to transition our business model from low margin commodity markets to higher margin specialty ingredients markets. We began the transition by first commercializing and supplying farnesene-derived squalane as a cosmetic ingredient to formulators and distributors. We also entered into collaboration and supply agreements for the development and commercialization of molecules within the Flavor & Fragrance and Clean Beauty markets. We partner with our customers to create sustainable, high performing, low-cost molecules that replace an ingredient in their supply chains. We commercially scale and manufacture those molecules. Our revenue is generated from research and development collaboration programs, grants, renewable product sales, and license and royalty revenues from our renewable product portfolios.

All of our non-government partnerships include commercial terms for the supply of molecules we produce at commercial scale. The first molecule to generate revenue for us outside of farnesene was a fragrance molecule launched in 2015. Since the launch, this and additional fragrance molecules have continued to generate sales year over year. Our partners for these molecules are indicating continued strong growth due to their cost advantaged position, high purity of our molecules and our sustainable production method. In 2019, we commercially produced and shipped our Reb M product that is an alternative sweetener and sugar replacement for food and beverages. In 2020, we added a total of six new ingredients to our portfolio. We have a pipeline that can deliver an estimated two to three new molecules each year over the coming years.

Our time to market for molecules has decreased from seven years to less than a year for our most recent molecule, mainly due to our ability to leverage our biotechnology platform with proprietary computational tools, strain construction tools, screening and analytics tools, and advanced lab automation and data integration. Our

state-of-the-art infrastructure includes industry-leading strain engineering and lab automation located in Emeryville, California, pilot-scale production facilities in Emeryville, California and Campinas, Brazil, a demonstration-scale facility in Campinas, Brazil and a commercial scale production facility in Leland, North Carolina (owned and operated by our Aprinnova joint venture). We are able to use a wide variety of feedstocks for production but have focused on sourcing Brazilian sugarcane for our large-scale production because of its renewability, low cost and relative price stability. We are constructing a new purpose-built, large-scale specialty ingredients facility in Brazil, which we anticipate will allow for the manufacture of up to five products concurrently, including both our specialty ingredients portfolio and our alternative sweetener product. In September 2019, we obtained the necessary permits and broke ground for this facility and we expect construction to be completed by the end of 2021. During construction, we continue to manufacture our products at manufacturing sites in Brazil, the U.S. and Europe.

Sales and Revenue

We recognize revenue from product sales, license fees and royalties, and grants and collaborations.

We have research and development collaboration arrangements for which we receive payments from our collaboration partners, which include DARPA, Koninklijke DSM N.V. (DSM), Firmenich SA (Firmenich), Givaudan International SA (Givaudan), Yifan Pharmaceutical Co. Ltd. (Yifan) and others. Some of our collaboration arrangements provide for advance payments to us in consideration for grants of exclusivity or research efforts that we will perform. Our collaboration agreements, which may require us to achieve milestones prior to receiving payments, are expected to contribute revenues from product sales and royalties if and when they are commercialized. See Note 10, "Revenue Recognition" in Part II, Item 8 of this Annual Report on Form 10-K for additional information.

We have several other collaboration molecules in our development pipeline with partners including DSM, Givaudan, Firmenich and Yifan that we expect will contribute revenues from product sales and royalties if and when they are commercialized.

COVID-19 Business Update

We have been closely monitoring the impact of the global COVID-19 pandemic on all aspects of our business, including how it has and will impact our employees, partners, supply chain, and distribution network. Since the start of the pandemic in early 2020, we developed a comprehensive response strategy including establishing a cross-functional COVID-19 task force and implementing business continuity plans to manage the impact of the COVID-19 pandemic on our employees and our business. We have applied recommended public health strategies designed to prevent the spread of COVID-19 and have been focused on the health and welfare of our employees. We have successfully managed to sustain ongoing critical production campaigns and infrastructure while staying in compliance with State and County public health orders.

Accordingly, since the end of the first quarter of 2020, we have initiated several precautions in accordance with local regulations and guidelines to mitigate the spread of COVID-19 infection across our businesses, which has impacted the way we carry out our business, including additional sanitation and cleaning procedures in our laboratories and other facilities, on-site COVID-19 testing, temperature and symptom confirmations, instituting remote working when possible, and implementing social distancing and staggered worktime requirements for our employees who must work on-site. Our plans to reopen our sites and enable a broad return to work in our offices, laboratories and production facilities will continue to follow local public health plans and guidelines. As the effects of the COVID-19 pandemic and the availability of vaccines continue to rapidly evolve, even if our employees more broadly return to work in our offices, laboratories and production facilities, we have the flexibility to resume more restrictive on-site and remote work models, if needed, as a result of spikes or surges in COVID-19 infection, hospitalization rates or otherwise. See "*Risk Factors – Business and Operational Risks - The COVID-19 pandemic has impacted our business and results of operations and could have a material adverse effect on our business, results of operations and financial condition in the future.*"

Critical Accounting Policies and Estimates

Management's discussion and analysis of results of operations and financial condition are based on our consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the U.S. (U.S. GAAP). We believe that the critical accounting policies described in this section are those that significantly impact our financial condition and results of operations and require the most difficult, subjective or complex judgements, often as a result of the need to make estimates about the effects of matters that are inherently uncertain. Because of this uncertainty, actual results may vary from these estimates.

Our most critical accounting estimates include:

- Recognition of revenue including arrangements with multiple performance obligations;
- Valuation and allocation of fair value to various elements of complex related party transactions;
- The valuation of freestanding and embedded derivatives, which impacts gains or losses on such derivatives, the carrying value of debt, interest expense and deemed dividends; and
- The valuation of debt for which we have elected fair value accounting.

For a more detailed discussion of our critical accounting estimates and policies, see Note 1, "Basis of Presentation and Summary of Significant Accounting Policies" in Part II, Item 8 of this 2020 Form 10-K.

Results of Operations

Revenue

Years Ended December 31, (In thousands)	2020	2019	Change
Revenue:			
Renewable products	$104,338	$ 59,872	74%
Licenses and royalties	50,991	54,043	(6)%
Grants and collaborations	17,808	38,642	(54)%
Total revenue	$173,137	$152,557	13%

Total revenue increased by 13% to $173.1 million in 2020. Renewable products revenue increased by 74% to $104.3 million in 2020, due to a 197% increase in consumer products revenue and a 26% increase in ingredients revenue.

Licenses and royalties revenue decreased by 6% to $51.0 million in 2020, due to a reduction from DSM, partly offset by an increase from Firmenich.

Grants and collaborations revenue decreased by 54% to $17.8 million in 2020, primarily due to no collaboration revenue generated under our cannabinoid agreement in 2020 as compared to $18.3 million in 2019.

Our revenues are dependent on the timing and nature of arrangements entered into with our customers, which may include multiple performance obligations for which revenue accounting requires significant judgement and estimates. Based on the nature of our customer arrangements, our revenues may vary significantly from one period to the next.

Cost and Operating Expenses

Years Ended December 31, (In thousands)	2020	2019	Change
Cost of products sold	$ 87,812	$ 76,185	15%
Research and development	71,676	71,460	—%
Sales, general and administrative	137,071	126,586	8%
Impairment of other assets	—	216	(100)%
Total cost and operating expenses	$296,559	$274,447	8%

Cost of Products Sold

Cost of products sold includes the costs of raw materials, labor and overhead, amounts paid to contract manufacturers, inventory write-downs resulting from applying lower of cost or net realizable value inventory adjustments, and costs related to production scale-up. Because of our product mix, our cost of products sold does not change proportionately with changes in renewable product revenue.

Cost of products sold increased by 15% to $87.8 million in 2020, primarily due to a 74% increase in renewable products revenue, mostly offset by significant improvements in unit costs and manufacturing efficiencies.

Research and Development Expenses

Research and development expenses increased by 0.3% to $71.7 million in 2020, primarily due to increases in professional services and employee compensation, mostly offset by a net decrease in equipment-related expense. Equipment-related expense, including depreciation, decreased as the result of our replacing equipment rentals with financing leases, which replaced monthly rental expense with depreciation expense over a 3- to 5-year useful life for capitalized equipment.

Sales, General and Administrative Expenses

Sales, general and administrative expenses increased by 8% to $137.1 million in 2020, primarily due to an $11.5 million increase in sales and marketing expense related to our consumer brands.

Impairment of Other Assets

In 2019, we impaired $0.2 million of contingent consideration that had been recorded in 2017 in connection with the December 2017 sale of our factory in Brasil. There was no such impairment in 2020.

Other Income (Expense), Net

Years Ended December 31, (In thousands)	2020	2019	Change
Interest expense	$ (47,951)	$ (58,665)	(18)%
(Loss) gain from change in fair value of derivative instruments	(11,362)	2,777	(509)%
Loss from change in fair value of debt	(89,827)	(19,369)	364%
Loss upon extinguishment of debt	(51,954)	(44,208)	18%
Other income (expense), net	666	(783)	(185)%
Total other expense, net	$(200,428)	$(120,248)	67%

Total other expense, net was $200.4 million in 2020, compared to $120.2 million in 2019. The $80.2 million increase was primarily comprised of a $70.5 million increase in loss from change in fair value of debt, a $14.1 million swing from a gain to a loss in change in fair value of derivative instruments, and a $7.7 million increase in loss upon extinguishment of debt, partly offset by a $10.7 million decrease in interest expense.

The increase in loss from change in fair value of debt was due to a 95% increase in our stock price during 2020, combined with the addition of a second debt instrument (the Foris Convertible Note) for which we elected to account for at fair value during 2020; see Note 4, "Debt" in Part II, Item 8 of this Annual Report on Form 10-K for details regarding the Foris Convertible Note.

The swing from a gain to a loss in change in fair value of derivative instruments was primarily due to a 95% increase in our stock price during 2020; see Note 3, "Fair Value Measurement" in Part II, Item 8 of this Annual Report on Form 10-K for details regarding our outstanding derivative instruments.

The loss upon extinguishment of debt for the year ended December 31, 2020 was the result of debt modifications and restructuring which required the write-off of significant unamortized debt discount balances and expensing of the fair value of equity instruments granted or modified in connection with the debt settlement or modification.

The reduction in interest expense was primarily due to a decrease in debt discount accretion, along with lower average debt principal balances during 2020 as compared to the prior year.

Income Taxes

For the years ended December 31, 2020 and 2019, we recorded income tax expense of $0.3 million and $0.6 million related to accrued interest on uncertain tax positions.

See Note 13, "Income Taxes" in Part II, Item 8 of this Annual Report on Form 10-K for additional information.

Liquidity and Capital Resources

Years Ended December 31, (In thousands)	2020	2019
Net cash (used in) provided by:		
Operating activities	$(175,753)	$(156,933)
Investing activities	(12,781)	(13,080)
Financing activities	222,525	124,910
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(4,268)	(252)
Net increase (decrease) in cash, cash equivalents and restricted cash	$ 29,723	$ (45,355)

Liquidity

We have incurred operating losses since our inception, and we expect to continue to incur losses and negative cash flows from operations through at least the next 12 months following the issuance of this Annual Report on Form 10-K. As of December 31, 2020, we had negative working capital of $16.5 million, an accumulated deficit of $2.1 billion, and cash and cash equivalents of $30.2 million.

As of December 31, 2020, the principal amounts due under our debt instruments (including related party debt) totaled $170.5 million, of which $56.5 million is classified as current. Our debt agreements contain various covenants, including certain restrictions on our business — including restrictions on additional indebtedness, material adverse effect and cross default provisions — that could cause us to be at risk of default. A failure to

comply with the covenants and other provisions of our debt instruments, including any failure to make payments when required, would generally result in events of default under such instruments, which could result in the acceleration of a substantial portion of such indebtedness. Acceleration would generally also constitute an event of default under our other outstanding debt instruments, which could result in the acceleration of a substantial portion of our debt repayment obligations.

During 2020 we failed to meet certain covenants under several credit arrangements, including those associated with missed payments, cross-default provisions, minimum liquidity and minimum asset coverage requirements. These lenders provided permanent waivers to us for breaches of all past covenant violations and cross-default payment failures under the respective credit agreements, and significantly reduced the minimum liquidity requirement and substantially increased the base of eligible assets to calculate the asset coverage requirement.

Cash and cash equivalents of $30.2 million as of December 31, 2020 are not sufficient to fund expected future negative cash flows from operations and cash debt service obligations through March 2022. These factors raise substantial doubt about our ability to continue as a going concern within one year after the date that the financial statements in this Annual Report on Form 10-K are issued. The consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty. Our ability to continue as a going concern will depend, in large part, on our ability to minimize the anticipated negative cash flows from operations during the 12 months from the date of this filing and to raise additional proceeds through strategic transactions, financings, and refinance or extend other existing debt maturities that will occur in June 2021 ($10 million as of the date of this filing), all of which are uncertain and outside of our control.

Our operating plan for 2021 contemplates a significant reduction in net operating cash outflows as compared to the year ended December 31, 2020, resulting from (i) revenue growth from sales of existing and new products with positive gross margins, (ii) reduced production costs as a result of manufacturing and technical developments, (iii) the monetization of certain assets, (iv) an increase in cash inflows from collaboration and grants and licenses and royalties, and (v) lower debt servicing expense. Our operating plan for 2021 also contemplates funding the construction and launch of our new specialty ingredients fermentation facility in Brazil, which will most likely require financing that is significantly above any potential to generate excess cash flows from operations. If we are unable to generate sufficient cash inflows from product sales, licenses and collaboration arrangements, we will need to obtain additional funding from new equity or debt financings, which may not occur timely or on reasonable terms, if at all, and agree to burdensome covenants, grant further security interests in our assets, enter into collaboration and licensing arrangements that require us to relinquish commercial rights, or grant licenses on terms that are not favorable.

If we do not achieve our planned operating results, we may need to take the following actions to support our liquidity needs in 2021:

- shift focus to existing products and customers with significantly reduced investment in new product and commercial development efforts;
- reduce expenditures for employees and third-party contractors, including consultants, professional advisors and other vendors;
- reduce or delay uncommitted capital expenditures, including expenditures related the construction and commissioning of the new production facility in Brazil, nonessential facilities and lab equipment, and information technology projects; and
- closely monitor our working capital position with customers and suppliers, as well as suspend operations at pilot plants and demonstration facilities.

Implementing this plan could negatively impact our ability to continue our business as currently contemplated, including, without limitation, delays or failures in our ability to:

- achieve planned production levels;

- develop and commercialize products within planned timelines or at planned scales; and
- continue other core activities.

We will need to fund operations for the foreseeable future with cash currently on hand, cash inflows from product sales, licenses and royalties, grants and collaborations, and equity and debt financings, to the extent necessary. Some of our research and development collaborations are subject to the risk that we may not meet milestones. Future equity and debt financings, if needed, are subject to the risk that we may not be able to secure financing in a timely manner or on reasonable terms, if at all.

For details, see the following Notes in Part II, Item 8 of this Annual Report on Form 10-K:

- Note 4, "Debt"
- Note 5, "Mezzanine Equity"
- Note 6, "Stockholders' Deficit"

Cash Flows during the Years Ended December 31, 2020 and 2019

Cash Flows from Operating Activities

Our primary uses of cash from operating activities are for personnel costs and costs related to the production and sales of our products, offset by cash received from sales to customers.

For the year ended December 31, 2020, net cash used in operating activities was $175.8 million, which was primarily comprised of our $326.9 million net loss and a decrease of $54.4 million in working capital, partly offset by $205.5 million of non-cash charges. Non-cash charges were primarily comprised of an $89.8 million loss from change in fair value of debt, a $52.0 million loss upon extinguishment of debt, $13.7 million of stock-based compensation expense, an $11.4 million loss from change in fair value of derivative instruments and $10.5 million of non-cash interest expense in connection with the release of pre-delivery shares to a debt holder in connection with a previous debt issuance. The decrease in working capital was primarily comprised of a $24.2 million increase in accounts receivable, a $16.2 million increase in inventories and a $4.0 million increase in contract assets.

For the year ended December 31, 2019, net cash used in operating activities was $156.9 million, which was comprised of our $242.8 million net loss and a $23.8 million decrease in working capital, partly offset by $109.6 million of non-cash charges. The decrease in working capital was primarily comprised of an $18.0 million increase in inventories, a $17.1 million decrease in lease liabilities, a $13.2 million increase in deferred cost of products sold, an $8.1 million increase in prepaid expenses and other assets, and a $6.9 million decrease in contract liabilities, mostly offset by a $42.7 million combined increase in accounts payable and accrued and other liabilities. Non-cash charges were primarily comprised of a $44.2 million loss upon extinguishment of debt, a $19.4 million loss from change in fair value of debt, $12.6 million of amortization of right-of-use assets under operating leases, $12.6 million of stock-based compensation expense and $11.7 million of debt discount accretion.

Cash Flows from Investing Activities

For the year ended December 31, 2020, net cash used in investing activities was $12.8 million and was comprised of property, plant and equipment purchases.

For the year ended December 31, 2019, net cash provided by investing activities was $13.1 million and was comprised of property, plant and equipment purchases.

Cash Flows from Financing Activities

For the year ended December 31, 2020, net cash provided by financing activities was $222.5 million, primarily comprised of $262.3 million of proceeds from the issuance of common stock and $15.6 million from the issuance of debt, partly offset by $52.0 million of principal payments on debt and $3.5 million of principal payments on financing leases.

For the year ended December 31, 2019, net cash provided by financing activities was $124.9 million, primarily comprised of $53.7 million of proceeds from the issuance of common stock and $189.2 million from the issuance of debt, partly offset by $112.4 million of principal payments on debt and $5.3 million of principal payments on financing leases.

Off-Balance Sheet Arrangements

None.

Contractual Obligations

The following is a summary of our contractual obligations as of December 31, 2020:

Payable by Year Ended December 31, (In thousands)	Total	2021	2022	2023	2024	2025	Thereafter
Principal payments on debt	$170,504	$56,515	$ 99,236	$12,793	$307	$321	$1,332
Interest payments on debt	29,917	13,454	16,051	106	91	75	140
Operating leases	18,686	7,503	7,680	3,340	163	—	—
Partnership payment obligation	11,286	878	10,408	—	—	—	—
Construction costs in connection with new production facility	5,448	5,448	—	—	—	—	—
Financing leases	4,570	4,570	—	—	—	—	—
Contract termination fees	4,344	4,344	—	—	—	—	—
Total	$244,755	$92,712	$133,375	$16,239	$561	$396	$1,472

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

Not applicable for smaller reporting companies.

Item 8. Financial Statements and Supplementary Data

AMYRIS, INC.

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

Report of Independent Registered Public Accounting Firm

Board of Directors and Stockholders of Amyris, Inc.

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of Amyris, Inc. and subsidiaries (the "Company") as of December 31, 2020 and 2019, and the related statements of operations, comprehensive loss, stockholders' deficit and mezzanine equity, and cash flows for each of the two years in the period ended December 31, 2020, 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 financial position of the Company as of December 31, 2020 and 2019, and the results of its operations and its cash flows for each of the two years in the period ended December 31, 2020, in conformity with accounting principles generally accepted in the United States of America.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) ("PCAOB"), the Company's internal control over financial reporting as of December 31, 2020, based on criteria established in *Internal Control—Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO") and our report dated March 5, 2021 expressed an unqualified opinion on the effectiveness of the Company's internal control over financial reporting.

Going Concern

The accompanying consolidated financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 1 to the consolidated financial statements, the Company has suffered recurring losses from operations, has an accumulated deficit of $2.1 billion and current debt service requirements that raise substantial doubt about its ability to continue as a going concern. Management's plans in regard to these matters are also described in Note 1. The consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty.

Changes in Accounting Principles

As discussed in Note 1 to the consolidated financial statements, the Company has changed its accounting method of accounting for leases on January 1, 2019, due to the adoption of Financial Accounting Standard Board's Accounting Standards Codification 842, Leases. The Company also amended the classification of certain equity-linked financial instruments with down round features and the respective disclosure requirements in fiscal year 2019 due to adoption of Accounting Standards Update No. 2017-11.

Basis for Opinion

These consolidated financial statements are the responsibility of the entity's management. Our responsibility is to express an opinion on these 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.

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.

Critical Audit Matters

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

Valuation and allocation of fair value to various elements of complex related party transactions with DSM Nutritional Products, Ltd.

Critical Audit Matter Description

The strategic alliance between the Company and DSM Nutritional Products, Ltd. and its affiliates (collectively, DSM) started in May 2017 with an equity investment by DSM in Amyris, and has since been expanded with several significant product development collaborations. The Company's relationships and transactions with DSM, including the nature of, terms of, and business purposes, are complex and evolving.

Amyris is licensing to DSM rights to assume the supply of Farnesene to Givaudan for the production and sale of a single specialty ingredient. The transaction is valued at $50 million, with $30 million payable by December 30, 2020, $10 million payable in the first quarter of 2021, and the remainder in milestone payments thereafter.

How the Critical Audit Matter Was Addressed in the Audit

Our audit procedures related to management's conclusion on amount, timing and presentation of transactions with DSM, include the following, among others:

- We tested the effectiveness of controls over the Company's process for identifying, authorizing and approving, and accounting for and disclosing related party transactions.
- Evaluated whether Company management has properly identified, authorized and approved, accounted for, and disclosed its related parties and relationships and transactions with the Company's related parties.
- Inquired of the Audit Committee regarding their understanding of the Company's relationships and transactions with related parties that are significant to the Company and whether there are any concerns and the substance of such concerns regarding relationships or transactions with related parties.
- For each transaction that is required to either be accounted for and disclosed in the Company's consolidated financial statements, performed specific procedures, including, but not limited, to the following:
- Inspected the executed contract to test that the facts on which management's conclusions were reached were consistent with the actual terms and conditions of the contract.

- Evaluated the contract within the context of the five-step model prescribed by ASC 606, Revenue from Contracts with Customers, and evaluating whether management's conclusions were appropriate.
- Compared the transaction price to the consideration expected to be received from a third party based on current rights and obligations under the contracts and any modifications that were agreed upon with DSM.
- Tested the accuracy and completeness of the costs incurred to date for the performance obligation.
- Tested the mathematical accuracy of management's calculation of revenue for the performance obligation.

Valuation of freestanding and embedded derivatives and debt for which fair value accounting is elected

Critical Audit Matter Description

The Company measures the following financial assets and liabilities at fair value:

- Freestanding and bifurcated derivatives in connection with certain debt and equity financings; and
- Debt for which the Company elected fair value accounting.

The Company's assessment of the significance of a particular input to the fair value measurement in its entirety requires management to make judgements and consider factors specific to the asset or liability. The methods of determining the fair value of embedded derivative liabilities and debt liabilities is based on a binomial model.

There is no current observable market for these types of derivatives and, as such, the Company determined the fair value of the freestanding instruments or embedded derivatives using the Black-Scholes-Merton option pricing model or a probability weighted discounted cash flow analysis measuring the fair value of the debt instrument both with and without the embedded feature.

A binomial lattice model was also used to determine if the convertible debt would be converted, called or held at each decision point. Within the lattice model, the following assumptions are made: (i) the convertible note will be converted early if the conversion value is greater than the holding value and (ii) the convertible note will be called if the holding value is greater than both (a) redemption price and (b) the conversion value at the time. If the convertible note is called, the holder will maximize their value by finding the optimal decision between (1) redeeming at the redemption price and (2) converting the convertible note. The fair value models also include inputs related to stock price, discount yield, risk free rates, equity volatility, probability of principal repayment in cash or stock and probability and timing of change in control.

Changes in valuation assumptions can have a significant impact on the valuation of the embedded and freestanding derivative liabilities and debt that the Company elects to account for at fair value. For example, all other things being equal, generally, an increase in the Company's stock price, change of control probability, risk-adjusted yields term to maturity/conversion or stock price volatility increases the value of the derivative liability.

How the Critical Audit Matter Was Addressed in the Audit

Our audit procedures related to management's conclusion on the valuation of freestanding and embedded derivatives and debt for which fair value accounting is elected, included the following, among others:

- Assessed the Company's internal control over accounting for financial instruments and derivatives.
- A high degree of subjective auditor judgment was involved in evaluating certain inputs to the model used to determine the fair value of the various liabilities. We assessed methodologies and tested the significant assumptions and underlying data used by the Company.
- Considered management's policy of reviewing valuation methodologies, inputs and assumptions utilized by third-party pricing services.

- Assessed the historical accuracy of management's estimates by performing a sensitivity analyses of the significant assumptions to evaluate the changes in the fair value models resulting from changes in the assumptions. There is limited observable market information and the calculated fair value of such assets was sensitive to possible changes in these key inputs.
- We also used a valuation specialist to assist us in evaluating the Company's models, valuation methodology, and significant assumptions used in the fair value estimates.

/s/ Macias Gini & O'Connell LLP

We have served as the Company's auditor since 2019.

San Francisco, California
March 5, 2021

AMYRIS, INC.
CONSOLIDATED BALANCE SHEETS

December 31, (In thousands, except shares and per share amounts)	2020	2019
Assets		
Current assets:		
Cash and cash equivalents	$ 30,152	$ 270
Restricted cash	309	469
Accounts receivable, net of allowance of $137 and $45, respectively	32,846	16,322
Accounts receivable - related party, net of allowance of $0 and $0, respectively	12,110	3,868
Contract assets	4,178	8,485
Contract assets - related party	1,203	—
Inventories	42,862	27,770
Deferred cost of products sold - related party	9,801	3,677
Prepaid expenses and other current assets	13,103	12,750
Total current assets	146,564	73,611
Property, plant and equipment, net	32,875	28,930
Contract assets, noncurrent - related party	—	1,203
Deferred cost of products sold, noncurrent - related party	9,939	12,815
Restricted cash, noncurrent	961	960
Recoverable taxes from Brazilian government entities	8,641	7,676
Right-of-use assets under financing leases, net (Note 2)	9,994	12,863
Right-of-use assets under operating leases, net (Note 2)	10,136	13,203
Other assets	3,704	9,705
Total assets	$222,814	$160,966
Liabilities, Mezzanine Equity and Stockholders' Deficit		
Current liabilities:		
Accounts payable	$ 41,045	$ 51,234
Accrued and other current liabilities	30,707	36,655
Financing lease liabilities (Note 2)	4,170	3,465
Operating lease liabilities (Note 2)	5,226	4,625
Contract liabilities	4,468	1,353
Debt, current portion (includes instrument measured at fair value of $53,387 and $24,392, respectively)	54,748	45,313
Related party debt, current portion (includes instrument measured at fair value of $0 and $0, respectively)	22,689	18,492
Total current liabilities	163,053	161,137

AMYRIS, INC.
CONSOLIDATED BALANCE SHEETS, Continued

December 31, (In thousands, except shares and per share amounts)	2020	2019
Long-term debt, net of current portion (includes instrument measured at fair value of $0 and $26,232, respectively)	26,170	48,452
Related party debt, net of current portion (includes instrument measured at fair value of $123,164 and $0, respectively)	159,452	149,515
Financing lease liabilities, net of current portion (Note 2)	—	4,166
Operating lease liabilities, net of current portion (Note 2)	9,732	15,037
Derivative liabilities	8,698	9,803
Other noncurrent liabilities	22,754	23,024
Total liabilities	389,859	411,134
Commitments and contingencies (Note 9)		
Mezzanine equity:		
Contingently redeemable common stock (Note 5)	5,000	5,000
Stockholders' deficit:		
Preferred stock - $0.0001 par value, 5,000,000 shares authorized as of December 31, 2020 and 2019; 8,280 shares issued and outstanding as of December 31, 2020 and 2019	—	—
Common stock - $0.0001 par value, 350,000,000 and 250,000,000 shares authorized as of December 31, 2020 and 2019, respectively; 244,951,446 and 117,742,677 shares issued and outstanding as of December 31, 2020 and 2019, respectively	24	12
Additional paid-in capital	1,957,224	1,543,668
Accumulated other comprehensive loss	(47,375)	(43,804)
Accumulated deficit	(2,086,692)	(1,755,653)
Total Amyris, Inc. stockholders' deficit	(176,819)	(255,777)
Noncontrolling interest	4,774	609
Total stockholders' deficit	(172,045)	(255,168)
Total liabilities, mezzanine equity and stockholders' deficit	$ 222,814	$ 160,966

See accompanying notes to consolidated financial statements.

AMYRIS, INC.
CONSOLIDATED STATEMENTS OF OPERATIONS

Years Ended December 31, (In thousands, except shares and per share amounts)	2020	2019
Revenue:		
Renewable products (includes related party revenue of $986 and $56, respectively)	$ 104,338	$ 59,872
Licenses and royalties, net (includes related party revenue of $43,750 and $49,051, respectively)	50,991	54,043
Grants and collaborations (includes related party revenue of $7,018 and $4,120 respectively)	17,808	38,642
Total revenue (includes related party revenue of $51,754 and $53,227, respectively)	173,137	152,557
Cost and operating expenses:		
Cost of products sold	87,812	76,185
Research and development	71,676	71,460
Sales, general and administrative	137,071	126,586
Impairment of other assets	—	216
Total cost and operating expenses	296,559	274,447
Loss from operations	(123,422)	(121,890)
Other income (expense):		
Interest expense	(47,951)	(58,665)
(Loss) gain from change in fair value of derivative instruments	(11,362)	2,777
Loss from change in fair value of debt	(89,827)	(19,369)
Loss upon extinguishment of debt	(51,954)	(44,208)
Other income (expense), net	666	(783)
Total other expense, net	(200,428)	(120,248)
Loss before income taxes and loss from investment in affiliate	(323,850)	(242,138)
Provision for income taxes	(293)	(629)
Loss from investment in affiliate	(2,731)	—
Net loss	(326,874)	(242,767)
Income attributable to noncontrolling interest	(4,165)	—
Net loss attributable to Amyris, Inc.	(331,039)	(242,767)
Less: deemed dividend to preferred stockholders upon conversion of Series E preferred stock	(67,151)	—
Less: deemed dividend to preferred stockholder on issuance and modification of common stock warrants	—	(34,964)
Add: loss allocated to participating securities	15,879	7,380
Net loss attributable to Amyris, Inc. common stockholders	$(382,311)	$(270,351)

AMYRIS, INC.
CONSOLIDATED STATEMENTS OF OPERATIONS, Continued

Years Ended December 31, (In thousands, except shares and per share amounts)	2020	2019
Denominator:		
Weighted-average shares of common stock outstanding used in computing net loss per share of common stock, basic	203,598,673	101,370,632
Basic loss per share	$ (1.88)	$ (2.67)
Weighted-average shares of common stock outstanding used in computing net loss per share of common stock, diluted	203,598,673	101,296,575
Diluted loss per share	$ (1.88)	$ (2.72)

See accompanying notes to consolidated financial statements.

AMYRIS, INC.
CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS

Years Ended December 31, (In thousands)	2020	2019
Comprehensive loss:		
Net loss	$(326,874)	$(242,767)
Foreign currency translation adjustment	(3,571)	(461)
Total comprehensive loss	$(330,445)	$(243,228)
Income attributable to noncontrolling interest	(4,165)	—
Comprehensive loss attributable to Amyris, Inc.	$(334,610)	$(243,228)

See accompanying notes to consolidated financial statements.

AMYRIS, INC.
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' DEFICIT AND MEZZANINE EQUITY

(In thousands, except number of shares)	Preferred Stock Shares	Preferred Stock Amount	Common Stock Shares	Common Stock Amount	Additional Paid-in Capital	Accumulated Other Comprehensive Loss	Accumulated Deficit	Noncontrolling Interest	Total Stockholders' Deficit	Mezzanine Equity - Common Stock
Balance as of December 31, 2018	**14,656**	**$—**	**76,564,829**	**$ 8**	**$1,346,996**	**$(43,343)**	**$(1,521,417)**	**$937**	**$(216,819)**	**$5,000**
Cumulative effect of change in accounting principle for ASU 2017-11 (see "Significant Accounting Policies" in Note 1)	—	—	—	—	32,512	—	8,531	—	41,043	—
Issuance of common stock and warrants upon conversion of debt principal and accrued interest	—	—	14,107,637	2	62,859	—	—	—	62,861	—
Issuance of common stock in private placement, net of issuance costs - related party	—	—	10,478,338	1	39,499	—	—	—	39,500	—
Issuance and modification of common stock warrants	—	—	—	—	34,964	—	—	—	34,964	—
Deemed dividend to preferred shareholder on issuance and modification of common stock warrants	—	—	—	—	(34,964)	—	—	—	(34,964)	—
Issuance of common stock in private placement	—	—	3,610,944	—	14,221	—	—	—	14,221	—
Issuance of warrants in connection with related party debt issuance	—	—	—	—	20,121	—	—	—	20,121	—
Issuance of warrants in connection with related party debt modification	—	—	—	—	4,932	—	—	—	4,932	—
Issuance of warrants in connection with debt accounted for at fair value	—	—	—	—	5,358	—	—	—	5,358	—
Stock-based compensation	—	—	—	—	12,554	—	—	—	12,554	—
Fair value of pre-delivery shares issued to lenders	—	—	7,500,000	1	4,214	—	—	—	4,215	—
Issuance of common stock upon ESPP purchase	—	—	318,490	—	1,078	—	—	—	1,078	—

AMYRIS, INC.
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' DEFICIT AND MEZZANINE EQUITY, Continued

(In thousands, except number of shares)	Preferred Stock Shares	Preferred Stock Amount	Common Stock Shares	Common Stock Amount	Additional Paid-in Capital	Accumulated Other Comprehensive Loss	Accumulated Deficit	Noncontrolling Interest	Total Stockholders' Deficit	Mezzanine Equity - Common Stock
Fair value of bifurcated embedded conversion feature in connection with debt modification	—	—	—	—	398	—	—	—	398	—
Issuance of common stock upon exercise of stock options	—	—	3,612	—	27	—	—	—	27	—
Issuance of common stock upon exercise of warrants	—	—	2,515,174	—	1	—	—	—	1	—
Conversion of Series B preferred shares into common shares	(6,376)	—	1,012,071	—	—	—	—	—	—	—
Distribution to non-controlling interests	—	—	—	—	—	—	—	(328)	(328)	—
Foreign currency translation adjustment	—	—	—	—	—	(461)	—	—	(461)	—
Issuance of common stock and payment of minimum employee taxes withheld upon net share settlement of restricted stock	—	—	1,631,582	—	(1,102)	—	—	—	(1,102)	—
Net loss attributable to Amyris, Inc.	—	—	—	—	—	—	(242,767)	—	(242,767)	—
Balance as of December 31, 2019	**8,280**	**—**	**117,742,677**	**12**	**1,543,668**	**(43,804)**	**(1,755,653)**	**609**	**(255,168)**	**5,000**
Issuance of preferred and common stock in private placements, net of issuance costs	72,156	—	36,098,894	3	170,034	—	—	—	170,037	—
Issuance of common stock upon exercise of warrants - related party	—	—	29,165,166	2	83,113	—	—	—	83,115	—
Issuance of preferred and common stock in private placements - related party, net of issuance costs	30,000	—	10,505,652	1	57,188	—	—	—	57,189	—
Issuance of common stock and warrants upon conversion of debt principal and accrued interest	—	—	6,337,594	1	21,259	—	—	—	21,260	—

AMYRIS, INC.
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' DEFICIT AND MEZZANINE EQUITY, Continued

(In thousands, except number of shares)	Preferred Stock		Common Stock		Additional Paid-in Capital	Accumulated Other Comprehensive Loss	Accumulated Deficit	Noncontrolling Interest	Total Stockholders' Deficit	Mezzanine Equity - Common Stock
	Shares	Amount	Shares	Amount						
Issuance of common stock upon conversion of debt principal and accrued interest, and extinguishment of related derivative liability	—	—	3,246,489	—	15,778	—	—	—	15,778	—
Issuance of common stock right warrant—related party	—	—	5,226,481	1	8,903	—	—	—	8,904	—
Issuance of common stock upon exercise of warrants	—	—	1,343,675	—	3,476	—	—	—	3,476	—
Issuance of common stock upon ESPP purchase	—	—	357,655	—	843	—	—	—	843	—
Issuance of common stock upon exercise of stock options	—	—	11,061	—	46	—	—	—	46	—
Issuance of common stock upon automatic conversion of Series E preferred stock	(102,156)	—	34,052,084	4	(4)	—	—	—	—	—
Issuance of common stock and payment of minimum employee taxes withheld upon net share settlement of restricted stock	—	—	2,227,654	—	(404)	—	—	—	(404)	—
Beneficial conversion feature related to issuance of Series E preferred stock	—	—	—	—	67,151	—	—	—	67,151	—
Deemed dividend upon conversion of Series E preferred stock into common stock	—	—	—	—	(67,151)	—	—	—	(67,151)	—
Exercise of common stock rights warrant - related party	—	—	—	—	15,000	—	—	—	15,000	—
Extinguishment of liability warrants to equity	—	—	—	—	11,750	—	—	—	11,750	—

AMYRIS, INC.
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' DEFICIT AND MEZZANINE EQUITY, Continued

(In thousands, except number of shares)	Preferred Stock		Common Stock		Additional Paid-in Capital	Accumulated Other Comprehensive Loss	Accumulated Deficit	Noncontrolling Interest	Total Stockholders' Deficit	Mezzanine Equity - Common Stock
	Shares	Amount	Shares	Amount						
Fair value of pre-delivery shares released to holder in connection with previous debt issuance	—	—	—	—	10,478	—	—	—	10,478	—
Modification of previously issued common stock warrants	—	—	—	—	2,353	—	—	—	2,353	—
Stock-based compensation	—	—	—	—	13,743	—	—	—	13,743	—
Return of pre-delivery shares previously issued to lenders	—	—	(1,363,636)	—	—	—	—	—	—	—
Net loss attributable to Amyris, Inc.	—	—	—	—	—	—	(331,039)	4,165	(326,874)	—
Foreign currency translation adjustment	—	—	—	—	—	(3,571)	—	—	(3,571)	—
Balance as of December 31, 2020	**8,280**	**$—**	**244,951,446**	**$24**	**$1,957,224**	**$(47,375)**	**$(2,086,692)**	**$4,774**	**$(172,045)**	**$5,000**

See accompanying notes to consolidated financial statements.

AMYRIS, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS

Years Ended December 31, (In thousands)	2020	2019
Operating activities:		
Net loss	$(326,874)	$(242,767)
Adjustments to reconcile net loss to net cash used in operating activities:		
Loss from change in fair value of debt	89,827	19,369
Loss upon conversion or extinguishment of debt	51,954	44,208
Stock-based compensation	13,743	12,554
Loss (gain) from change in fair value of derivative instruments	11,362	(2,777)
Non-cash interest expense in connection with release of pre-delivery shares to holder in connection with previous debt issuance	10,478	—
Depreciation and amortization	9,371	4,581
Contract asset credit loss reserve	8,342	—
Accretion of debt discount	3,829	11,665
Amortization of right-of-use assets under operating leases	2,755	12,597
Loss in equity-method investee	2,731	297
Non-cash interest expense in connection with modification of warrants	1,066	—
Loss on disposal of property, plant and equipment	61	212
Non-cash interest expense recorded as increase to debt principal	100	—
Impairment of property, plant and equipment	13	1,354
Expense for warrants issued for covenant waivers	—	5,358
Loss on impairment of other assets	—	216
Gain on foreign currency exchange rates	(119)	(22)
Changes in assets and liabilities:		
Accounts receivable	(24,161)	(2,818)
Contract assets	(4,035)	(8,485)
Contract assets - related party	—	8,021
Inventories	(16,249)	(17,989)
Deferred cost of products sold - related party	(3,248)	(13,175)
Prepaid expenses and other assets	(443)	(8,064)
Accounts payable	(10,081)	23,748
Accrued and other liabilities	5,148	18,981
Lease liabilities	(4,438)	(17,125)
Contract liabilities	3,115	(6,872)
Net cash used in operating activities	(175,753)	(156,933)

AMYRIS, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS, Continued

Years Ended December 31, (In thousands)	2020	2019
Investing activities:		
Purchases of property, plant and equipment	(12,781)	(13,080)
Net cash used in investing activities	(12,781)	(13,080)
Financing activities:		
Proceeds from issuance of preferred and common stock in private placements, net of issuance costs	170,037	14,221
Proceeds from issuance of preferred and common stock in private placements, net of issuance costs - related party	45,000	39,500
Proceeds from exercise of warrants - related party	28,348	—
Proceeds from issuance of debt, net of issuance costs	15,599	189,175
Proceeds from exercise of common stock rights warrant - related party	15,000	—
Proceeds from exercise of warrants	3,476	1
Proceeds from ESPP purchases	843	1,078
Proceeds from exercises of common stock options	46	27
Capital distribution to noncontrolling interest	—	(328)
Payment of minimum employee taxes withheld upon net share settlement of restricted stock units	(404)	(1,103)
Principal payments on financing leases	(3,461)	(5,268)
Principal payments on debt	(51,959)	(112,393)
Net cash provided by financing activities	222,525	124,910
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(4,268)	(252)
Net increase (decrease) in cash, cash equivalents and restricted cash	29,723	(45,355)
Cash, cash equivalents and restricted cash at beginning of year	1,699	47,054
Cash, cash equivalents and restricted cash at end of year	$ 31,422	$ 1,699
Reconciliation of cash, cash equivalents and restricted cash to the consolidated balance sheets		
Cash and cash equivalents	$ 30,152	$ 270
Restricted cash, current	309	469
Restricted cash, noncurrent	961	960
Total cash, cash equivalents and restricted cash	$ 31,422	$ 1,699
Supplemental disclosures of cash flow information:		
Cash paid for interest	$ 16,609	$ 20,780

AMYRIS, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS, Continued

Years Ended December 31, (In thousands)	2020	2019
Supplemental disclosures of non-cash investing and financing activities:		
Accrued interest added to debt principal	$ 2,056	$ 7,292
Acquisition of additional interest in equity-method investee in exchange for payment obligation	$ —	$ 5,031
Acquisition of right-of-use assets under operating leases	$ —	$ 3,551
Cumulative effect of change in accounting principle for ASU 2017-11 (Note 2)	$ —	$41,043
Debt fair value adjustment in connection with debt issuance	$ —	$11,575
Derecognition of derivative liabilities to equity upon extinguishment of debt	$ 6,461	$ —
Derecognition of derivative liabilities upon authorization of shares	$ 6,550	$ —
Derecognition of derivative liabilities upon exercise of warrants	$ 5,200	$ —
Exercise of common stock warrants in exchange for debt principal and interest reduction	$69,918	$ —
Fair value of warrants and embedded features recorded as debt discount in connection with debt issuances	$ 188	$ 237
Fair value of warrants and embedded features recorded as debt discount in connection with debt issuances - related party	$ 747	$ 1,954
Fair value of embedded features in connection with private placement	$ 2,962	$ —
Fair value of pre-delivery shares in connection with debt issuance	$ —	$ 4,215
Fair value of warrants recorded as debt discount in connection with debt issuances	$ —	$ 8,965
Fair value of warrants recorded as debt discount in connection with debt issuances - related party	$ —	$16,155
Fair value of warrants recorded as debt discount in connection with debt modification	$ —	$ 398
Fair value of warrants recorded as debt discount in connection with debt modification - related party	$ —	$ 2,050
Financing of equipment under financing leases	$ —	$ 7,436
Financing of insurance premium under note payable	$ —	$ 253
Issuance of common stock upon conversion of convertible notes and accrued interest	$27,650	$62,860
Issuance of common stock upon exercise of common stock rights warrant in previous period - related party	$ 1	$ —
Lease liabilities recorded upon adoption of ASC 842 (Note 2)	$ —	$33,552
Right-of-use assets under operating leases recorded upon adoption of ASC 842 (Note 2)	$ —	$29,713
Unpaid property, plant and equipment balances in accounts payable and accrued liabilities at end of period	$ 1,575	$ 2,576

See accompanying notes to consolidated financial statements.

Amyris, Inc.
Notes to Consolidated Financial Statements

1. Basis of Presentation and Summary of Significant Accounting Policies

Business Description

As a leading synthetic biotechnology company active in the Clean Health and Beauty markets through our consumer brands and a top supplier of sustainable and natural ingredients, Amyris, Inc. and subsidiaries (collectively, Amyris or the Company) apply the Company's proprietary Lab-to-Market biotechnology platform to engineer, manufacture and market high performance, natural and sustainably sourced products. The Company does so with the use of computational tools, strain construction tools, screening and analytics tools, and advanced lab automation and data integration. The Company's biotechnology platform enables the Company to rapidly engineer microbes and use them as catalysts to metabolize renewable, plant-sourced sugars into high-value ingredients that the Company manufactures at industrial scale. Through the combination of our biotechnology platform and our industrial fermentation process, the Company has successfully developed, produced and commercialized many distinct molecules.

Going Concern

The Company has incurred operating losses since its inception and expects to continue to incur losses and negative cash flows from operations for at least the next 12 months following the issuance of its financial statements. As of December 31, 2020, the Company had negative working capital of $16.5 million and an accumulated deficit of $2.1 billion.

As of December 31, 2020, the principal amounts due under the Company's debt instruments (including related party debt) totaled $170.5 million, of which $56.5 million is classified as current. The Company's debt agreements contain various covenants, including certain restrictions on the Company's business that could cause the Company to be at risk of defaults, such as restrictions on additional indebtedness, material adverse effect and cross default provisions. A failure to comply with the covenants and other provisions of the Company's debt instruments, including any failure to make a payment when required, would generally result in events of default under such instruments, which could permit acceleration of a substantial portion of such indebtedness. If such indebtedness is accelerated, it would generally also constitute an event of default under the Company's other outstanding indebtedness, permitting acceleration of a substantial portion of such other outstanding indebtedness.

During 2020 the Company failed to meet certain covenants under several credit arrangements (which are discussed in Note 4, "Debt"), including those associated with missed payments, cross-default provisions, minimum liquidity and minimum asset coverage requirements. These lenders provided permanent waivers to the Company for breaches of all past covenant violations and cross-default payment failures under the respective credit agreements, and significantly reduced the minimum liquidity requirement and substantially increased the base of eligible assets to calculate the asset coverage requirement.

Cash and cash equivalents of $30.2 million as of December 31, 2020 are not sufficient to fund expected future negative cash flows from operations and cash debt service obligations through March 2022. These factors raise substantial doubt about the Company's ability to continue as a going concern within one year after the date these financial statements are issued. The consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty. The Company's ability to continue as a going concern will depend, in large part, on its ability to minimize the anticipated negative cash flows from operations during the 12 months from the date of this filing and to raise additional proceeds through strategic transactions, financings, and refinance or

extend other existing debt maturities that will occur in June 2021 ($10 million as of the date of this filing), all of which are uncertain and outside the control of the Company. Further, the Company's operating plan for the next 12 months contemplates a significant reduction in its net operating cash outflows as compared to the year ended December 31, 2020, resulting from (i) revenue growth from sales of existing and new products with positive gross margins, (ii) reduced production costs as a result of manufacturing and technical developments, (iii) the monetization of certain assets, (iv) an increase in cash inflows from collaboration and grants and licenses and royalties, and (v) lower debt servicing expense. If the Company is unable to complete these actions, it expects to be unable to meet its operating cash flow needs and its obligations under its existing debt facilities. This could result in an acceleration of its obligation to repay all amounts outstanding under those facilities, and the Company may be forced to obtain additional equity or debt financing, which may not occur timely or on reasonable terms, if at all, and/or liquidate its assets. In such a scenario, the value received for assets in liquidation or dissolution could be significantly lower than the value reflected in these financial statements.

Basis of Consolidation

The accompanying consolidated financial statements have been prepared in accordance with the accounting principles generally accepted in the United States (U.S. GAAP). The consolidated financial statements include the accounts of Amyris, Inc. and its wholly-owned and partially-owned subsidiaries in which the Company has a controlling financial interest after elimination of all significant intercompany accounts and transactions.

Investments and joint venture arrangements are assessed to determine whether the terms provide economic or other control over the entity requiring consolidation of the entity. Entities controlled by means other than a majority voting interest are referred to as variable-interest entities (VIEs) and are consolidated when Amyris has both the power to direct the activities of the VIE that most significantly impact its economic performance and the obligation to absorb losses or the right to receive benefits that could potentially be significant to the entity. The Company accounts for its equity investments and joint venture using the equity method for any investment or joint venture in which (i) the Company does not have a majority ownership interest, (ii) the Company possesses the ability to exert significant influence and (iii) the entity is not a VIE for which the Company is considered the primary beneficiary.

Use of Estimates and Judgements

The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates, judgements and assumptions that affect the reported amounts of assets and liabilities, disclosures of contingent assets and liabilities at the date of the financial statements, and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates, and such differences may be material to the consolidated financial statements. Significant estimates and judgements used in these consolidated financial statements are discussed in the relevant accounting policies below or specifically discussed in the Notes to Consolidated Financial Statements where such transactions are disclosed.

Significant Accounting Policies

Cash and Cash Equivalents

The Company considers all highly liquid investments purchased with an original or remaining maturity of three months or less at the date of purchase to be cash equivalents. Cash and cash equivalents are maintained with various financial institutions.

Inventories

Inventories, which consist of farnesene-derived products, flavors and fragrances ingredients and clean beauty products, are stated at the lower of actual cost or net realizable value and are categorized as finished goods, work

in process or raw material inventories. The Company evaluates the recoverability of its inventories based on assumptions about expected demand and net realizable value. If the Company determines that the cost of inventories exceeds their estimated net realizable value, the Company records a write-down equal to the difference between the cost of inventories and the estimated net realizable value. If actual net realizable values are less favorable than those projected by management, additional inventory write-downs may be required that could negatively impact the Company's operating results. If actual net realizable values are more favorable, the Company may have favorable operating results when products that have been previously written down are sold in the normal course of business. The Company also evaluates the terms of its agreements with its suppliers and establishes accruals for estimated losses on adverse purchase commitments as necessary, applying the same lower of cost or net realizable value approach that is used to value inventory. Cost for farnesene-derived products and flavors and fragrances ingredients are computed on a weighted-average basis. Cost for clean beauty products are computed on a standard cost basis.

Property, Plant and Equipment, Net

Property, plant and equipment are recorded at cost. Depreciation and amortization are computed straight-line based on the estimated useful lives of the related assets, ranging from 3 to 15 years for machinery, equipment and fixtures, and 15 years for buildings. Leasehold improvements are amortized over their estimated useful lives or the period of the related lease, whichever is shorter.

The Company expenses costs for maintenance and repairs and capitalizes major replacements, renewals and betterments. For assets retired or otherwise disposed, both cost and accumulated depreciation are eliminated from the asset and accumulated depreciation accounts, and gains or losses related to the disposal are recorded in the statement of operations for the period.

Impairment

Long-lived assets that are held and used by the Company are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of such assets may not be recoverable. Determination of recoverability of long-lived assets is based on an estimate of the undiscounted future cash flows resulting from the use of the asset and its eventual disposition. Measurement of an impairment loss for long-lived assets that management expects to hold and use is based on the difference between the fair value of the asset and its carrying value. Long-lived assets to be disposed of are reported at the lower of carrying amount or fair value less costs to sell.

Recoverable Taxes from Brazilian Government Entities

Recoverable taxes from Brazilian government entities represent value-added taxes paid on purchases in Brazil, which are reclaimable from the Brazilian tax authorities, net of reserves for amounts estimated not to be recoverable.

Fair Value Measurements

The carrying amounts of certain financial instruments, such as cash equivalents, short-term investments, accounts receivable, accounts payable and accrued liabilities, approximate fair value due to their relatively short maturities.

The Company measures the following financial assets and liabilities at fair value:

- Warrants to purchase common stock and freestanding and bifurcated derivatives in connection with certain debt and equity financings; and
- Senior Convertible Notes and Foris Convertible Note (see Note 3, "Fair Value Measurement" and Note 4, "Debt", for which the Company elected fair value accounting.

Fair value is based on the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants. Where available, fair value is based on or derived from observable market prices or other observable inputs. Where observable prices or inputs are not available, valuation techniques are applied. These valuation techniques involve some level of management estimation and judgement, the degree of which is dependent on the price transparency for the instruments or market and the instruments' complexity.

Changes to the inputs, including the closing price of the Company common stock at each period end, used in these valuation models can have a significant impact on the estimated fair value of the Senior Convertible Notes, Foris Convertible Note and the Company's embedded and freestanding derivatives. For example, a decrease (increase) in the estimated credit spread for the Company results in an increase (decrease) in estimated fair value. Conversely, a decrease (increase) in the Company's closing stock price at period end results in a decrease (increase) in estimated fair value of these instruments.

The changes during 2020 and 2019 in the fair values of the warrants and bifurcated compound embedded derivatives are primarily related to the change in price of the Company's common stock and are reflected in the consolidated statements of operations as "Gain (loss) from change in fair value of derivative instruments".

The fair value of debt instruments for which the Company has not elected fair value accounting, is based on the present value of expected future cash flows and assumptions about the then-current market interest rates as of the reporting period and the creditworthiness of the Company. Most of the Company's debt is carried on the consolidated balance sheet on a historical cost basis net of unamortized discounts and premiums, because the Company has not elected the fair value option of accounting. However, for the Senior Convertible Notes, the Company elected fair value accounting at the issue date in 2018, and for the Foris Convertible Note at the reissue date in June 2020, so the balances reported for those debt instruments represent fair value as of the applicable balance sheet date; see Note 3, "Fair Value Measurement" for additional information. Changes in fair value of the Senior Convertible Notes and the Foris Convertible Note are reflected in the consolidated statements of operations as "Gain (loss) from change in fair value of debt".

For all debt instruments, including any for which the Company has elected fair value accounting, the Company classifies interest that has been accrued during each period as Interest expense on the consolidated statements of operations.

Derivatives

Embedded derivatives that are required to be bifurcated from the underlying debt instrument (i.e., host) are accounted for and valued as separate financial instruments. The Company has evaluated the terms and features of its notes payable and identified embedded derivatives requiring bifurcation and accounting at fair value, using the valuation techniques mentioned in the *Fair Value Measurements* section of this Note, because the economic and contractual characteristics of the embedded derivatives met the criteria for bifurcation and separate accounting due to the instruments containing mandatory redemption features that are not clearly and closely related to the debt host instrument.

Prior to the adoption of ASU 2017-11, certain previously issued warrants with a fair value of $41 million issued in conjunction with certain convertible debt and equity financings were freestanding financial instruments and classified as derivative liabilities as of December 31, 2019. Upon adoption of ASU 2017-11 on January 1, 2019, these freestanding instruments met the criteria to be accounted for within equity and the $41 million derivative liability balance was reclassified to stockholders' equity.

During the third and fourth quarter of 2019, the Company issued warrants in connection with a debt financing that met the criteria of a freestanding instrument but did not qualify for equity accounting treatment. As a result, these warrants are accounted for at fair value until settled and are classified as derivative liabilities at December 31, 2020. See Note 6 "Stockholders' Deficit" for further information.

Noncontrolling Interest

Noncontrolling interests represent the portion of net income (loss), net assets and comprehensive income (loss) that is not allocable to the Company, in situations where the Company consolidates its equity investment in a joint venture or as the primary beneficiary of a variable-interest entity (VIE) for which there are other owners. The amount of noncontrolling interest is comprised of the amount of such interests at the date of the Company's original acquisition of an equity interest or involvement in a joint venture, plus the other shareholders' share of changes in equity since the date the Company made an investment in the joint venture.

Concentration of Credit Risk

Financial instruments that potentially subject the Company to a concentration of credit risk consist primarily of cash and cash equivalents, short-term investments and accounts receivable. The Company places its cash equivalents and investments (if any) with high credit quality financial institutions and, by policy, limits the amount of credit exposure with any one financial institution. Deposits held with banks may exceed the amount of insurance provided on such deposits. The Company has not experienced any losses on its deposits of cash and cash equivalents and short-term investments.

The Company performs ongoing credit evaluation of its customers, does not require collateral, and maintains allowances for potential credit losses on customer accounts when deemed necessary.

Customers representing 10% or greater of accounts receivable were as follows:

As of December 31,	2020	2019
Customer A (related party)	27%	19%
Customer B	17%	21%
Customer E	13%	**
Customer D	**	10%

** Less than 10%

Customers representing 10% or greater of revenue were as follows:

Years Ended December 31,	Year First Customer	2020	2019
Customer A (related party)	2017	30%	35%
Customer B	2014	10%	10%
Customer C	2019	**	12%

** Less than 10%

Revenue Recognition

The Company recognizes revenue from the sale of renewable products, licenses and royalties from intellectual property, and grants and collaborative research and development services. Revenue is measured based on the

consideration specified in a contract with a customer, and the transaction price is allocated utilizing stand-alone selling price. Revenue is recognized when, or as, the Company satisfies a performance obligation by transferring control over a product or service to a customer. The Company generally does not incur costs to obtain new contracts. The costs to fulfill a contract are expensed as incurred.

The Company accounts for a contract when it has approval and commitment to perform from both parties, the rights of the parties are identified, payment terms are established, the contract has commercial substance and collectability of the consideration is probable. Changes to contracts are assessed for whether they represent a modification or should be accounted for as a new contract. The Company considers the following indicators, among others, when determining if it is acting as a principal in the transaction and recording revenue on a gross basis: (i) the Company is primarily responsible for fulfilling the promise to provide the specified goods or service, (ii) the Company has inventory risk before the specified good or service has been transferred to a customer or after transfer of control to the customer and (iii) the Company has discretion in establishing the price for the specified good or service. If a transaction does not meet the Company's indicators of being a principal in the transaction, then the Company is acting as an agent in the transaction and the associated revenues are recognized on a net basis.

The Company's significant contracts and contractual terms with its customers are presented in Note 10, "Revenue Recognition".

The Company recognizes revenue when control of the good or service has passed to the customer. The following indicators are evaluated in determining when control has passed to the customer: (i) the customer has legal title to the product, (ii) the Company has transferred physical possession of the product or service to the customer, (iii) the Company has a right to receive payment for the product or service, (iv) the customer absorbs the significant risks and rewards of ownership of the product and (v) the customer has accepted the product. For most of the Company's renewable products customers, supply agreements between the Company and each customer indicate when transfer of title occurs.

In some cases, the Company may make a payment to a customer. When that occurs, the Company evaluates whether the payment is for a distinct good or service from the customer. If the fair value of the goods or services is greater than or equal to the amount paid to the customer, then the entire payment is treated as a purchase. If, on the other hand, the fair value of goods or services is less than the amount paid, then the difference is treated as a reduction in transaction price of the Company's sales to the customer or a reduction of cumulative to-date revenue recognized from the customer in the period the payment is made or goods or services are received from the customer.

Performance Obligations

A performance obligation is a promise in a contract to transfer a distinct good or service to the customer. A contract's transaction price is allocated to each distinct performance obligation and recognized as revenue when, or as, the performance obligation is satisfied. The Company's contracts may contain multiple performance obligations if a promise to transfer the individual goods or services is separately identifiable from other promises in the contracts and, therefore, is considered distinct. For contracts with multiple performance obligations, the Company determines the standalone selling price of each performance obligation and allocates the total transaction price using the relative selling price basis.

The following is a description of the principal goods and services from which the Company generates revenue.

Renewable Product Sales

Revenues from renewable product sales are recognized as a distinct performance obligation on a gross basis as the Company is acting as a principal in these transactions, with the selling price to the customer recorded net of discounts and allowances. Revenues are recognized at a point in time when control has passed to the customer,

which typically occurs when the renewable products leaves the Company's facilities with the first transportation carrier. The Company, on occasion, may recognize revenue under a bill and hold arrangement, whereby the customer requests and agrees to purchase product but requests delivery at a later date. Under these arrangements, control transfers to the customer when the product is ready for delivery, which occurs when the product is identified separately as belonging to the customer, the product is ready for shipment to the customer in its current form, and the Company does not have the ability to direct the product to a different customer. It is at this point the Company has the right to receive payment, the customer obtains legal title, and the customer has the significant risks and rewards of ownership. The Company's renewable product sales do not include rights of return, except for direct-to-consumer products, for which the Company estimates sales returns subsequent to sale and reduces revenue accordingly. For renewable products other than direct-to-consumer, returns are accepted only if the product does not meet product specifications and such nonconformity is communicated to the Company within a set number of days of delivery. The Company offers a two-year assurance-type warranty to replace squalane products that do not meet Company-established criteria as set forth in the Company's trade terms. An estimate of the cost to replace the squalane products sold is made based on a historical rate of experience and recognized as a liability and related expense when the renewable product sale is consummated.

Licenses and Royalties

Licensing of Intellectual Property: When the Company's intellectual property licenses are determined to be distinct from the other performance obligations identified in the arrangement, revenue is recognized from non-refundable, up-front fees allocated to the license at a point in time when the license is transferred to the licensee and the licensee is able to use and benefit from the license. For intellectual property licenses that are combined with other promises, the Company utilizes judgment to assess the nature of the combined performance obligation to determine whether the combined performance obligation is satisfied over time or at a point in time and, if over time, the appropriate method of measuring progress for purposes of recognizing revenue from non-refundable, up-front-fees. The Company evaluates the measure of progress each reporting period and, if necessary, adjusts the measure of performance and related revenue recognized.

Royalties from Licensing of Intellectual Property: The Company earns royalties from the licensing of its intellectual property whereby the licensee uses the intellectual property to produce and sell its products to its customers and the Company shares in the profits.

When the Company's intellectual property license is the only performance obligation, or it is the predominant performance obligation in arrangements with multiple performance obligations, the Company applies the sales-based royalty exception which requires the Company to estimate the revenue that is recognized at a point in time when the licensee's product sales occur. Estimates of sales-based royalty revenues are made using the most likely outcome method, which is the single amount in a range of possible amounts, using the best evidence available at the time, derived from the licensee's historical sales volumes and sales prices of its products and recent commodity market pricing data and trends. Estimates are adjusted to actual or as new information becomes available.

When the Company's intellectual property license is not the predominant performance obligation in arrangements with multiple performance obligations, the royalty represents variable consideration and is allocated to the transaction price of the predominant performance obligation which generally is the supply of renewable products to the Company's customers. Revenue is estimated and recognized at a point in time when the renewable products are delivered to the customer. Estimates of the amount of variable consideration to include in the transaction price are made using the expected value method, which is the sum of probability-weighted amounts in a range of possible amounts determined based on the cost to produce the renewable product plus a reasonable margin for the profit share. The Company only includes an amount of variable consideration in the transaction price to the extent it is probable that a significant reversal in the cumulative revenue recognized will not occur when the

uncertainty associated with the variable consideration is subsequently resolved. Also, the transaction price is reduced for estimates of customer incentive payments payable by the Company for certain customer contracts.

Grants and Collaborative Research and Development Services

Collaborative Research and Development Services: The Company earns revenues from collaboration agreements with customers to perform research and development services to develop new molecules using the Company's technology and to scale production of the molecules for commercialization and use in the collaborator's products. The collaboration agreements generally include providing the Company's collaboration partners with research and development services and with licenses to the Company's intellectual property to use the technology underlying the development of the molecules and to sell its products that incorporate the technology. The terms of the Company's collaboration agreements typically include one or more of the following: (i) advance payments for the research and development services that will be performed, (ii) nonrefundable upfront license payments, (iii) milestone payments to be received upon the achievement of the milestone events defined in the agreements, (iv) payments for inventory manufactured under supply agreements upon the commercialization of the molecules, and (v) royalty payments upon the commercialization of the molecules in which the Company shares in the customer's profits.

Collaboration agreements are evaluated at inception to determine whether the intellectual property licenses represent distinct performance obligations separate from the research and development services. If the licenses are determined to be distinct, the non-refundable upfront license fee is recognized as revenue at a point in time when the license is transferred to the licensee and the licensee is able to use and benefit from the license while the research and development service fees are recognized over time as the performance obligations are satisfied. The research and development service fees represent variable consideration. Estimates of the amount of variable consideration to include in the transaction price are made using the expected value method, which is the sum of probability-weighted amounts in a range of possible amounts. The Company only includes an amount of variable consideration in the transaction price to the extent it is probable that a significant reversal in the cumulative revenue recognized will not occur when the uncertainty associated with the variable consideration is subsequently resolved. Revenue is recognized over time using either an input-based measure of labor hours expended or a time-based measure of progress towards the satisfaction of the performance obligations. The measure of progress is evaluated each reporting period and, if necessary, adjustments are made to the measure of progress and the related revenue recognized.

Collaboration agreements that include milestone payments are evaluated at inception to determine whether the milestone events are considered probable of achievement, and estimates are made of the amount of the milestone payments to include in the transaction price using the most likely amount method which is the single amount in a range of possible amounts. If it is probable that a significant revenue reversal will not occur, the estimated milestone payment amount is included in the transaction price. Each reporting period, the Company re-evaluates the probability of achievement of the milestone events and any related constraint, and if necessary, adjusts its estimate of the overall transaction price. Any such adjustments are recorded on a cumulative basis, which would affect collaboration revenues in the period of adjustment. Generally, revenue is recognized using an input-based measure of progress towards the satisfaction of the performance obligations which can be labor hours expended or time-based in proportion to the estimated total project effort or total projected time to complete. The measure of progress is evaluated each reporting period and, if necessary, adjustments are made to the measure of progress and the related revenue recognized. Certain performance obligations are associated with milestones agreed between the Company and its customer. Revenue generated from the performance of services in accordance with these types of milestones is recognized upon confirmation from the customer that the milestone has been achieved. In these cases, amounts recognized are constrained to the amount of consideration received upon achievement of the milestone.

The Company generally invoices its collaboration partners on a monthly or quarterly basis, or upon the completion of the effort or achievement of a milestone, based on the terms of each agreement. Contract liabilities arise from amounts received in advance of performing the research and development activities and are recognized as revenue in future periods as the performance obligations are satisfied.

Grants: The Company earns revenues from grants with government agencies to, among other things, provide research and development services to develop molecules using the Company's technology, and create research and development tools to improve the timeline and predictability for scaling molecules from proof of concept to market by reducing time and costs. Grants typically consist of research and development milestone payments to be received upon the achievement of the milestone events defined in the agreements.

The milestone payments are evaluated at inception to determine whether the milestone events are considered probable of achievement and estimates are made of the amount of the milestone payments to include in the transaction price using the most likely amount method which is the single amount in a range of possible amounts. If it is probable that a significant revenue reversal will not occur, the estimated milestone payment amount is included in the transaction price. Each reporting period, the Company re-evaluates the probability of achievement of the milestone events and any related constraint and, if necessary, adjusts its estimate of the overall transaction price. Any such adjustments are recorded on a cumulative basis, which would affect grant revenues in the period of adjustment. Revenue is recognized over time using a time-based measure of progress towards the satisfaction of the performance obligations. The measure of progress is evaluated each reporting period and, if necessary, adjustments are made to the measure of progress and the related revenue recognized.

The Company receives certain consideration from AICEP Portugal Global (AICEP), an entity funded by the government of Portugal, under the Consortium Internal Regulatory Agreement and an AICEP Investment Contract (the "Agreements") entered into by Amyris (the "Company") with Universidade Católica Portuguesa (UCP) Porto Campus. The Company considered this arrangement to be a government grant and accounts for the arrangement under International Accounting Standard 20 "Accounting for Government Grants and Disclosure of Government Assistance". Grant revenue is recognized when there is reasonable assurance that monies will be received and that conditions attached to the grant have been met.

Cost of Products Sold

Cost of products sold reflects the production costs of renewable products, and includes the cost of raw materials, in-house manufacturing labor and overhead, amounts paid to contract manufacturers, including amortization of tolling fees, and period costs including inventory write-downs resulting from applying lower of cost or net realizable value inventory adjustments. Cost of products sold also includes certain costs related to the scale-up of production. Shipping and handling costs charged to customers are recorded as revenues. Outbound shipping costs incurred are included in cost of products sold. Such charges were not material for any of the periods presented.

The Company recognizes deferred cost of products sold as an asset on the balance sheet when a cost is incurred in connection with a revenue performance obligation that will not be fulfilled until a future period. The Company also recorded a deferred cost of products asset for the fair value of amounts paid to DSM under a supply agreement for manufacturing capacity to produce its sweetener product at the Brotas facility in Brazil. The deferred cost of products sold asset is expensed to cost of products sold on a units of production basis over the five-year term of the supply agreement. On a quarterly basis, the Company evaluates its future production volumes for its sweetener product and adjusts the unit cost to be expensed over the remaining estimated production volume. The Company also periodically evaluates the asset for recoverability based on changes in business strategy and product demand trends over the term of the supply agreement.

Research and Development

Research and development costs are expensed as incurred and include costs associated with research performed pursuant to collaborative agreements and government grants, including internal research. Research and development costs consist of direct and indirect internal costs related to specific projects, as well as fees paid to others that conduct certain research activities on the Company's behalf.

Debt Extinguishment

The Company accounts for the income or loss from extinguishment of debt in accordance with ASC 470, *Debt,* which indicates that for all extinguishments of debt, including instances where the terms of a debt instrument are modified in a manner that significantly changes the underlying cash flows, the difference between the reacquisition consideration and the net carrying amount of the debt being extinguished should be recognized as gain or loss when the debt is extinguished. Losses from debt extinguishment are shown in the consolidated statements of operations under "Other income (expense)" as "Loss upon extinguishment of debt".

Stock-based Compensation

The Company accounts for stock-based employee compensation plans under the fair value recognition and measurement provisions of U.S. GAAP. Those provisions require all stock-based payments to employees, including grants of stock options and restricted stock units (RSUs), to be measured using the grant-date fair value of each award. The Company recognizes stock-based compensation expense net of expected forfeitures over each award's requisite service period, which is generally the vesting term. Expected forfeiture rates are estimated based on the Company's historical experience. Stock-based compensation plans are described more fully in Note 12, "Stock-based Compensation".

Income Taxes

The Company is subject to income taxes in the United States and foreign jurisdictions and uses estimates to determine its provisions for income taxes. The Company uses the asset and liability method of accounting for income taxes, whereby deferred tax asset or liability account balances are calculated at the balance sheet date using current tax laws and rates in effect for the year in which the differences are expected to affect taxable income.

Recognition of deferred tax assets is appropriate when realization of such assets is more likely than not. The Company recognizes a valuation allowance against its net deferred tax assets unless it is more likely than not that such deferred tax assets will be realized. This assessment requires judgement as to the likelihood and amounts of future taxable income by tax jurisdiction.

The Company applies the provisions of Financial Accounting Standards Board (FASB) guidance on accounting for uncertainty in income taxes. The Company assesses all material positions taken in any income tax return, including all significant uncertain positions, in all tax years that are still subject to assessment or challenge by relevant taxing authorities. Assessing an uncertain tax position begins with the initial determination of the position's sustainability, and the tax benefit to be recognized is measured at the largest amount of benefit that is greater than 50 percent likely of being realized upon ultimate settlement. As of each balance sheet date, unresolved uncertain tax positions must be reassessed, and the Company will determine whether (i) the factors underlying the sustainability assertion have changed and (ii) the amount of the recognized tax benefit is still appropriate. The recognition and measurement of tax benefits requires significant judgement, and such judgements may change as new information becomes available.

Foreign Currency Translation

The assets and liabilities of foreign subsidiaries, where the local currency is the functional currency, are translated from their respective functional currencies into U.S. dollars at the rates in effect at each balance sheet date, and revenue and expense amounts are translated at average rates during each period, with resulting foreign currency translation adjustments recorded in other comprehensive loss, net of tax, in the consolidated statements of stockholders' deficit. As of December 31, 2020 and 2019, cumulative translation adjustment, net of tax, were $47.4 million and $43.8 million, respectively.

Where the U.S. dollar is the functional currency, remeasurement adjustments are recorded in other income (expense), net in the accompanying consolidated statements of operations. Net losses resulting from foreign exchange transactions were $0.7 million and $0.2 million for the years ended December 31, 2020 and 2019, respectively and are recorded in other income (expense), net in the consolidated statements of operations.

New Accounting Standards or Updates Recently Adopted

During the year ended December 31, 2020 the Company adopted the following Accounting Standards Updates (ASUs):

Fair Value Measurement In August 2018, the FASB issued ASU 2018-13, *Fair Value Measurement (Topic 820): Disclosure Framework—Changes to the Disclosure Requirements for Fair Value Measurement*, which amends ASC 820, *Fair Value Measurement*. ASU 2018-13 modifies the disclosure requirements for fair value measurements by removing, modifying or adding certain disclosures. ASU 2018-13 became effective in the first quarter of fiscal 2020, with removed and modified disclosures to be adopted on a retrospective basis, and new disclosures to be adopted on a prospective basis. The adoption of this standard did not have a material impact on the Company's consolidated financial statements.

Collaborative Revenue Arrangements In November 2018, the FASB issued ASU 2018-18, *Clarifying the Interaction between Topic 808 and Topic 606*, that clarifies the interaction between the guidance for certain collaborative arrangements and Topic 606, the new revenue recognition standard. A collaborative arrangement is a contractual arrangement under which two or more parties actively participate in a joint operating activity and are exposed to significant risks and rewards that depend on the activity's commercial success. The ASU provides guidance on how to assess whether certain transactions between collaborative arrangement participants should be accounted for within the revenue recognition standard. ASU 2018-18 became effective in the first quarter of fiscal year 2020 retrospectively. The adoption of this standard did not have any impact on the Company's consolidated financial statements.

Recent Accounting Standards or Updates Not Yet Effective

Credit Losses In June 2016, the FASB issued ASU 2016-13, *Financial Instruments—Credit Losses (Topic 326), Measurement of Credit Losses on Financial Instruments*. ASU 2016-13 requires entities to measure all expected credit losses for most financial assets held at the reporting date based on an expected loss model which includes historical experience, current conditions, and reasonable and supportable forecasts. Entities will now use forward-looking information to better form their credit loss estimates. ASU 2016-13 also requires enhanced disclosures to help financial statement users better understand significant estimates and judgments used in estimating credit losses, as well as the credit quality and underwriting standards of an entity's portfolio. ASU 2016-13 will be effective for the Company in the first quarter of 2023. The Company is currently evaluating the impact this standard will have on its consolidated financial statements.

Accounting for Income Taxes In December 2019, the FASB issued ASU 2019-12, *Simplifying the Accounting for Income Taxes (Topic 740)*. The amendments in ASU 2019-12 simplify the accounting for income taxes by removing certain exceptions to the general principles in ASC Topic 740, Income Taxes. The amendments also improve consistent application of and simplify U.S. GAAP for other areas of ASC Topic 740 by clarifying and amending existing guidance. ASU 2019-12 will be effective for the Company in the first quarter of fiscal year 2021. The transition requirements are dependent upon each amendment within this update and will be applied either prospectively or retrospectively. The Company is currently evaluating the amended guidance and the impact on its consolidated financial statements and related disclosures.

Equity Securities, Equity-method Investments and Certain Derivatives In January 2020, the FASB issued ASU 2020-01, *Investments-Equity Securities (Topic 321), Investments-Equity Method and Joint Ventures (Topic 323), and Derivatives and Hedging (Topic 815)-Clarifying the Interactions between Topic 321, Topic 323, and Topic 815*. The guidance provides clarification of the interaction of rules for equity securities, the equity method of accounting and forward contracts and purchase options on certain types of securities. ASU 2020-01 will be effective for the Company in the first quarter of 2021. While the Company is currently assessing the impact of the new guidance, it is not expected to have a material impact on the Company's financial statements.

Convertible Debt, and Derivatives and Hedging In August 2020, the FASB issued ASU 2020-06, *Debt—Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging—Contracts in Entity's Own Equity (Subtopic 815-40): Accounting for Convertible Instruments and Contracts in an Entity's Own Equity*, to improve financial reporting associated with accounting for convertible instruments and contracts in an entity's own equity. ASU 2020-06 will be effective for the Company in the first quarter of 2022. The Company is currently evaluating the amended guidance and the impact on its consolidated financial statements and related disclosures.

2. Balance Sheet Details

Allowance for Doubtful Accounts

Allowance for doubtful accounts activity and balances were as follows:

(In thousands)	Balance at Beginning of Year	Provisions	Write-offs, Net	Balance at End of Year
Allowance for doubtful accounts:				
Year Ended December 31, 2020	$ 45	$ 92	$ —	$137
Year Ended December 31, 2019	$642	$110	$(707)	$ 45

Inventories

December 31, (In thousands)	2020	2019
Raw materials	$11,800	$ 3,255
Work in process	10,760	7,204
Finished goods	20,302	17,311
Total inventories	$42,862	$27,770

Deferred cost of products sold — related party

December 31, (In thousands)	2020	2019
Deferred cost of products sold - related party	$ 9,801	$ 3,677
Deferred cost of products sold, noncurrent - related party	9,939	12,815
Total	$19,740	$16,492

In November 2018, the Company amended the supply agreement with DSM to secure manufacturing capacity at the Brotas facility for sweetener production through 2022. See Note 10, "Revenue Recognition" for information regarding the November 2018 Supply Agreement Amendment. The supply agreement was included as an element of a combined transaction with DSM, which resulted in a fair value allocation of $24.4 million to the manufacturing capacity. See Note 3, "Fair Value Measurement" for information related to this fair value allocation. Of the $24.4 million fair value allocated to the manufacturing capacity, $3.3 million was recorded as deferred cost of products sold during 2018. Also, the Company paid an additional $7.0 million and $14.1 million in manufacturing capacity fees during 2020 and 2019, respectively, which were recorded as deferred cost of products sold. The capitalized deferred cost of products sold asset is expensed to cost of products sold on a units of production basis as the Company's sweetener product is sold over the five-year term of the supply agreement. Each quarter, the Company evaluates its estimated future production volumes through the end of the agreement and adjusts the unit cost to be expensed over the remaining estimated production volume. During the years ended December 31, 2020 and 2019, the Company expensed $2.3 million and $0.9 million, respectively, of the deferred cost of products sold asset. Inception-to-date amortization expense to cost of products sold through December 31, 2020 totaled $3.3 million.

Prepaid expenses and other current assets

December 31, (In thousands)	2020	2019
Prepayments, advances and deposits	$ 6,637	$ 4,726
Non-inventory production supplies	3,989	5,376
Recoverable taxes from Brazilian government entities	1,063	79
Other	1,414	2,569
Total prepaid expenses and other current assets	$13,103	$12,750

Property, plant and equipment, net

December 31, (In thousands)	2020	2019
Machinery and equipment	$ 50,415	$ 48,041
Leasehold improvements	45,197	41,478
Computers and software	6,741	9,822
Furniture and office equipment, vehicles and land	3,507	3,510
Construction in progress	7,250	9,752
Total property, plant and equipment, gross	113,110	112,603
Less: accumulated depreciation and amortization	(80,235)	(83,673)
Total property, plant and equipment, net	$ 32,875	$ 28,930

During the years ended December 31, 2020 and 2019, depreciation and amortization expense, which includes amortization of financing lease assets, was as follows:

Years Ended December 31, (In thousands)	2020	2019
Depreciation and amortization	$8,508	$4,581

Losses on disposal of property, plant and equipment were $0.1 and $0.9 million for the years ended December 31, 2020 and 2019, respectively. Such losses or gains were included in the lines captioned "Research and development expense" and "Sales, general and administrative expense" in the consolidated statements of operations.

Leases

Operating Leases

The Company has operating leases primarily for administrative offices, laboratory equipment and other facilities. The operating leases have remaining terms that range from 1 year to 5 years, and often include one or more options to renew. These renewal terms can extend the lease term from 1 to 5 years and are included in the lease term when it is reasonably certain that the Company will exercise the option. The operating leases are classified as ROU assets under operating leases on the Company's consolidated balance sheets and represent the Company's right to use the underlying asset for the lease term. The Company's obligation to make operating lease payments is included in "Lease liabilities" and "Lease liabilities, net of current portion" on the Company's consolidated balance sheets. Operating lease right-of-use assets and liabilities are recognized at commencement date based on the present value of lease payments over the lease term. The Company had $10.1 million and $13.2 million of right-of-use assets as of December 31, 2020 and 2019, respectively. Operating lease liabilities were $15.0 million and $19.7 million as of December 31, 2020 and 2019, respectively. For the years ended December 31, 2020 and 2019, the Company recorded $7.7 million and $12.6 million, respectively of expense in connection with operating leases, of which $1.2 million and $7.0 million, respectively, was recorded to cost of products sold.

Because the rate implicit in each lease is not readily determinable, the Company uses its incremental borrowing rate to determine the present value of the lease payments. The Company has certain contracts for real estate and marketing that may contain lease and non-lease components, which the Company has elected to treat as a single lease component.

Information related to the Company's right-of-use assets and related lease liabilities were as follows:

Years Ended December 31, (In thousands)	2020	2019
Cash paid for operating lease liabilities, in thousands	$7,717	$17,809
Right-of-use assets obtained in exchange for new operating lease obligations[(1)]	$ —	$33,264
Weighted-average remaining lease term in years	2.49	3.35
Weighted-average discount rate	18.0%	18.0%

(1) 2019 amount includes $29.7 million for operating leases existing on January 1, 2019 and $3.6 million for operating leases that commenced during the year ended December 31, 2019. Also, the Company renegotiated one of its operating leases during 2019, which resulted in a new financing lease. Approximately $7.7 million of Right-of-use assets under operating leases, net was reclassified to Right-of-use assets under financing leases, net related to this operating lease modification.

Financing Leases

The Company has entered into financing leases primarily for laboratory and computer equipment. Assets purchased under financing leases are included in "Right-of-use assets under financing leases, net" on the consolidated balance sheets. For financing leases, the associated assets are depreciated or amortized over the shorter of the relevant useful life of each asset or the lease term. Accumulated amortization of assets under financing leases totaled $4.6 million and $1.7 million as of December 31, 2020 and 2019, respectively.

Maturities of Financing and Operating Leases

Maturities of lease liabilities as of December 31, 2020 were as follows:

Years Ending December 31 (In thousands)	Financing Leases	Operating Leases	Total Lease Obligations
2021	$ 4,570	$ 7,503	$12,073
2022	—	7,680	7,680
2023	—	3,340	3,340
2024	—	163	163
2025	—	—	—
Thereafter	—	—	—
Total future minimum payments	4,570	18,686	23,256
Less: amount representing interest	(400)	(3,728)	(4,128)
Present value of minimum lease payments	4,170	14,958	19,128
Less: current portion	(4,170)	(5,226)	(9,396)
Long-term portion	$ —	$ 9,732	$ 9,732

Other assets

December 31, (In thousands)	2020	2019
Equity-method investment	$2,380	$4,734
Deposits	128	295
Contingent consideration	—	3,303
Other	1,196	1,373
Total other assets	$3,704	$9,705

In connection with the December 2017 sale of its subsidiary Amyris Brasil Ltda. (Amyris Brasil), the Company recorded a long-term receivable related to certain contingent consideration to be received from DSM upon DSM's realization of certain Brazilian value-added tax benefits it acquired with its purchase of Amyris Brasil. In the second quarter of 2020, the Company received the $3.3 million remaining balance of contingent consideration due under the December 2017 asset purchase agreement.

In October 2019, the Company agreed to purchase the ownership interest previously held by Cosan in Novvi LLC, a joint venture among the Company, Cosan and certain other members, for $10.8 million. The Company is obligated to make payment in full by October 31, 2022. The Company measured and recorded the fair value of the investment based on the present value of the unsecured $10.8 million payment obligation, which was deemed to be more readily determinable than the fair value of the Novvi partnership interest. The Company measured the fair

value of this three-year unsecured financial liability using the Company's weighted average cost of capital of 29% which resulted in a present value of $5.0 million. The Company recorded the $5.0 million fair value of the investment and present value of financial obligation in other assets and other noncurrent liabilities and will accrete the $5.8 million difference between the $5.0 million present value of the liability and the $10.8 million payment obligation to interest expense under the effective interest method over the three-year payment term. For additional information regarding the Company's accounting this equity-method investment and the related asset value, see Note 1, "Basis of Presentation and Summary of Significant Accounting Policies" and Note 7, "Consolidated Variable-interest Entities and Unconsolidated Investments".

Accrued and other current liabilities

December 31, (In thousands)	2020	2019
Accrued interest	$ 9,327	$ 8,209
Payroll and related expenses	8,230	7,296
Contract termination fees	5,344	5,347
Asset retirement obligation[1]	3,041	3,184
Professional services	994	2,968
Ginkgo partnership payments obligation	878	4,319
Tax-related liabilities	656	1,685
Other	2,237	3,647
Total accrued and other current liabilities	$30,707	$36,655

(1) The asset retirement obligation represents liabilities incurred but not yet discharged in connection with our 2013 abandonment of a partially constructed facility in Pradópolis, Brazil.

Other noncurrent liabilities

December 31, (In thousands)	2020	2019
Liability for unrecognized tax benefit	$ 7,496	$ 7,204
Ginkgo partnership payments, net of current portion[1]	7,277	4,492
Liability in connection with acquisition of equity-method investment	6,771	5,249
Contract liabilities, net of current portion[2]	111	1,449
Refund liability[3]	—	3,750
Other	1,099	880
Total other noncurrent liabilities	$22,754	$23,024

(1) On August 10, 2020, the Company and Ginkgo entered into a Second Amendment to Promissory Note and Partnership Agreement (Second Amendment) to reduce the partnership payments frequency from monthly to quarterly, in an aggregate amount of $2.1 million, and to defer an aggregate of $9.8 million in partnership payments to the end of the agreement in October 2022 (the "End of Term Payment"), provided that, if the Ginkgo Promissory Note is not fully repaid by April 19, 2022, the End of Term Payment shall be of $10.4 million. See Note 4, "Debt." for more information. As a result of changes to key provisions in the partnership payments, the Company analyzed the combined before and after cash flows under the Promissory Note and Partnership Agreement that resulted from (i) the reduced interest rate on the Promissory Note, (ii) reduced payment frequency under the Promissory Note and Partnership Agreement, and (iii) changes in the periodic and total payment amounts under the Partnership Agreement, to determine whether these changes resulted in a modification or extinguishment of the obligations under the Second Amendment. Based on the combined before and after cash flows of the Promissory Note and Partnership Agreement, the change was significantly different. Consequently, the modifications resulting from the Second Amendment were accounted for as a debt extinguishment and a new debt issuance. The Company recorded a $0.1 million loss upon extinguishment of the partnership payment obligation, related to the write-off of the

unamortized debt discount. Further, since the partnership payment obligation does not contain an explicit interest rate, the Company recorded the $11.9 million of total payments at its net present value of $8.1 million in other liabilities, with the $3.8 million difference recorded as a discount that is accreted to interest expense over the repayment term using the effective interest method.

(2) Contract liabilities, net of current portion at December 31, 2020 and 2019 includes $0 and $1,204 at each date in connection with DSM, which is a related party.

(3) In April 2019, the Company assigned the Value Sharing Agreement to DSM. See Note 10, "Revenue Recognition" for further information. The assignment was accounted for as a contract modification under ASC 606 that resulted in $12.5 million of prepaid variable consideration to the Company. The $12.5 million was recorded as a refund liability. During the first quarter of 2020, the Company concluded that it would not be required to return any portion of the remaining refund liability to DSM, and recorded $3.8 million of royalty revenue related to this change in estimate and reduction of the refund liability.

3. Fair Value Measurement

Liabilities Measured and Recorded at Fair Value on a Recurring Basis

As of December 31, 2020 and 2019, the Company's financial liabilities measured and recorded at fair value on a recurring basis were classified within the fair value hierarchy as follows:

December 31, (In thousands)	2020				2019			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Liabilities								
Senior Convertible Notes	$—	$—	$ 53,387	53,387	$—	$—	$50,624	$50,624
Foris Convertible Note (LSA Amendment)	—	—	123,164	123,164	—	—	—	—
Embedded derivatives bifurcated from debt instruments	—	—	247	247	—	—	2,832	2,832
Freestanding derivative instruments issued in connection with other debt and equity instruments	—	—	8,451	8,451	—	—	6,971	6,971
Total liabilities measured and recorded at fair value	$—	$—	$185,249	$185,249	$—	$—	$60,427	$60,427

The Company did not hold any financial assets to be measured and recorded at fair value on a recurring basis as of December 31, 2020 and 2019. Also, there were no transfers between the levels during 2020 or 2019.

The Company's assessment of the significance of a particular input to the fair value measurement in its entirety requires management to make judgements and consider factors specific to the asset or liability. The method of determining the fair value of embedded derivative liabilities is described subsequently in this note. Market risk associated with embedded derivative liabilities relates to the potential reduction in fair value and negative impact to future earnings from a decrease in interest rates.

Changes in fair value of derivative liabilities are presented as gains or losses in the consolidated statements of operations in the line captioned "Gain (loss) from change in fair value of derivative instruments".

Changes in the fair value of debt that is accounted for at fair value are presented as gains or losses in the consolidated statements of operations in the line captioned "Gain (loss) from change in fair value of debt".

Fair Value of Debt — Foris Convertible Note (LSA Amendment)

On June 1, 2020, the Company and Foris Ventures, LLC (Foris), an entity affiliated with director John Doerr and which beneficially owns greater than 5% of the Company's outstanding common stock, entered into an Amendment No. 1 to the Amended and Restated Foris LSA (LSA Amendment), pursuant to which, among other provisions, Foris has the option, in its sole discretion, to convert all or a portion of the secured indebtedness under the LSA Amendment, including accrued interest, into shares of Common Stock at a $3.00 conversion price (Conversion Option), which Conversion Option was approved by the Company's stockholders on August, 14, 2020. See Note 4, "Debt" for further information regarding the LSA Amendment and related extinguishment accounting treatment. The Company elected to account for the new debt issuance under the fair value option and recorded a $22.0 million loss upon extinguishment of the Foris LSA, representing the difference between the carrying value of the Foris LSA prior to the modification and the $72.1 million reacquisition price of the Foris LSA (which is the fair value of the LSA Amendment with the conversion option). The LSA Amendment also contains certain change in control embedded derivatives and a contingent beneficial conversion feature and management believes the fair value option best reflects the underlying economics of new convertible note. Under the fair value election, changes in fair value will be reported in the consolidated statements of operations as "Gain (loss) from change in fair value of debt" in each reporting period subsequent to the issuance of the Foris Convertible Note (LSA Amendment).

At December 31, 2020, the contractual outstanding principal of the Foris Convertible Note was $50.0 million and the fair value was $123.2 million. The Company measured the fair value of the Foris Convertible Note using a binomial lattice model (which is discussed in further detail below) using the following inputs: (i) $6.18 stock price, (ii) 18% secured discount yield, (iii) 0.11% risk free interest rate (iv) 45% equity volatility and (v) 5% probability of change in control. The Company assumed that if a change of control event were to occur, it would occur at the end of the calendar year. The Company recorded a loss of $51.1 million related to change in fair value of the Foris Convertible Note for the year ended December 31, 2020.

Fair Value of Debt — Senior Convertible Notes

On January 14, 2020, the Company exchanged the $66 million Senior Convertible Notes (or the Prior Notes) for (i) new senior convertible notes in an aggregate principal amount of $51 million (the New Notes or Senior Convertible Notes), (ii) an aggregate of 2,742,160 shares of common stock (the Exchange Shares), (iii) rights (the Rights) to acquire up to an aggregate of 2,484,321 shares of common stock, (iv) warrants (the Warrants) to purchase up to an aggregate of 3,000,000 shares of common stock (the Warrant Shares) at an exercise price of $3.25 per share, with an exercise term of two years from issuance, (v) accrued and unpaid interest on the Prior Notes (payable on or prior to January 31, 2020) and (vi) cash fees in an aggregate amount of $1.0 million (payable on or prior to January 31, 2020). Due to the legal extinguishment and exchange of the Prior Notes and significantly different cash flows contained in the New Notes, the Company accounted for the exchange as a debt extinguishment of the Prior Notes and a new debt issuance of the New Notes. The Company recorded a $5.3 million loss upon extinguishment of debt, which was comprised of the $4.1 million fair value of the Warrants, the $1.0 million cash fee and $0.2 million excess fair value of the Exchange Shares and Rights over the $2.87 per share contractual value. See Note 4, "Debt" for further information regarding the transaction.

The Company elected to account for the Senior Convertible Notes at fair value, as of the January 14, 2020 issuance date. Management believes that the fair value option better reflects the underlying economics of the Senior Convertible Notes, which contain multiple embedded derivatives. Under the fair value election, changes in fair value will be reported as "Gain (loss) from change in fair value of debt" in the consolidated statements of operations in each reporting period subsequent to the issuance of the Senior Convertible Notes. At January 14, 2020, the contractual outstanding principal of the Senior Convertible Notes was $51.0 million and the fair value was $35.8 million. The Company measured the fair value at January 14, 2020 using a binomial lattice model (which is discussed in further detail below) using the following inputs: (i) $2.90 stock price, (ii) 226% discount yield, (iii) 1.59% risk free interest rate (iv) 45% equity volatility, (v) 25% / 75% probability of principal repayment in cash or stock, respectively and (vi) 5% probability of change in control. The Company assumed that if a change of control event were to occur, it would occur at the end of the calendar year.

At December 31, 2020, the contractual outstanding principal of the Senior Convertible Notes was $30.0 million and the fair value was $53.4 million. The Company measured the fair value at December 31, 2020 using a binomial lattice model (which is discussed in further detail below) using the following inputs: (i) $6.18 stock price, (ii) 221% discount yield, (iii) 0.09% risk free interest rate (iv) 45% equity volatility, and (v) 5% probability of change in control. The Company assumed that if a change of control event were to occur, it would occur at the end of the calendar year.

For the year ended December 31, 2020, the Company recorded a $38.7 million loss from change in fair value of debt in connection with the fair value remeasurement of the Prior Notes and the Senior Convertible Notes, as follows:

In thousands	
Fair value at November 14, 2019	$ 54,425
Less: gain from change in fair value	(3,801)
Equals: fair value at December 31, 2019	50,624
Less: principal repaid in cash	(17,950)
Less: principal repaid in common stock	(18,030)
Add: loss from change in fair value	38,743
Equals: fair value at December 31, 2020	$ 53,387

Binomial Lattice Model

A binomial lattice model was used to determine whether the Foris Convertible Note and the Senior Convertible Notes (Debt Instruments) would be converted, called or held at each decision point. Within the lattice model, the following assumptions are made: (i) the convertible note will be converted early if the conversion value is greater than the holding value and (ii) the convertible note will be called if the holding value is greater than both (a) redemption price and (b) the conversion value at the time. If the convertible note is called, the holder will maximize their value by finding the optimal decision between (1) redeeming at the redemption price and (2) converting the convertible note. Using this lattice method, the Company valued the Debt Instruments using the "with-and-without method", where the fair value of the Debt Instruments including the embedded and freestanding features is defined as the "with," and the fair value of the Debt Instruments excluding the embedded and freestanding features is defined as the "without." This method estimates the fair value of the Debt Instruments by looking at the difference in the values of the Debt Instruments with the embedded and freestanding derivatives and the fair value of the Debt Instruments without the embedded and freestanding features. The lattice model uses the stock price, conversion price, maturity date, risk-free interest rate, estimated stock volatility, estimated credit spread and other instrument-specific assumptions. The Company remeasures the fair value of the Debt Instruments and records the change as a gain or loss from change in fair value of debt in the statement of operations for each reporting period.

6% Convertible Notes Due 2021

On December 10, 2018, the Company issued $60.0 million of 6% Convertible Notes Due 2021 (see Note 4, "Debt" for details) and elected the fair value option of accounting for this debt instrument. The notes were extinguished in November 2019. The Company recorded a $23.2 million loss from change in fair value of debt in the year ended December 31, 2019 prior to extinguishing the debt.

Derivative Liabilities Recognized in Connection with the Issuance of Debt and Equity Instruments

The following table provides a reconciliation of the beginning and ending balances for the Company's derivative liabilities recognized in connection with the issuance of debt instruments, either freestanding or compound embedded, measured at fair value using significant unobservable inputs (Level 3):

(In thousands)	Derivative Liability
Balance at December 31, 2019	$ 9,803
Fair value of derivative liabilities issued during the period	8,751
Change in fair value of derivative liabilities	11,362
Derecognition on settlement or extinguishment	(21,218)
Balance at December 31, 2020	$ 8,698

Freestanding Derivative Instruments

In connection with the January 14, 2020 issuance of the Senior Convertible Notes as discussed above and in Note 4, "Debt" (which was accounted for as an extinguishment of the original $66 million Senior Convertible Notes), the Company issued warrants (the Warrants) to purchase up to an aggregate of 3.0 million shares of common stock (the Warrant Shares). Due to stock exchange ownership limitations, which if exceeded would require stockholder approval and possibly require cash settlement for failure to deliver shares upon exercise, the Company concluded that a portion of the Warrant Shares met the derivative scope exception and equity classification criteria and were accounted for as additional paid in capital, and a portion of the Warrant Shares did not meet the derivative scope exception or equity classification criteria and were accounted for as a derivative liability. The Warrants had an initial fair value of $4.1 million, which was recorded as: (i) $4.1 million loss upon extinguishment of debt, (ii) $2.4 million additional paid in capital and (iii) $1.7 million derivative liability. The Warrant Shares derivative liability portion will be remeasured each reporting period until settled or extinguished with subsequent changes in fair value recorded through the statement of operations. The fair value of the Warrants was determined using a Black-Scholes-Merton option pricing model based on the input assumptions for liability classified warrants table in the valuation methodology section below. At March 31, 2020, the fair value of the Warrant Shares derivative liability portion was $1.5 million, and the Company recorded a $0.2 million gain on change in fair value of derivative instruments during the three months ended March 31, 2020. On May 29, 2020, the Company obtained stockholder approval to remove the stock ownership limitations. As a result, the Company was able to physically deliver shares under the Warrants without the potential for cash settlement. In the three months ended June 30, 2020, the Company recorded a $1.3 million final mark-to-market loss on change in derivative liability, using a Black-Scholes-Merton option pricing model based on the input assumptions for liability classified warrants table in the valuation methodology section below, and derecognized the $2.8 million derivative liability balance relate to this portion of the Warrant Shares into additional paid in capital.

In connection with the January 31, 2020 private placement transaction with Foris (an entity affiliated with director John Doerr and which beneficially owns greater than 5% of the Company's outstanding common stock discussed in Note 6, "Stockholders' Deficit"), the Company issued a right (the Right) to purchase up to an aggregate of 5.2 million shares of common stock (the Right Shares). Due to certain contractual provisions in the Right, the Company concluded that a portion of the Right Shares met the derivative scope exception and equity classification criteria and were accounted for as additional paid in capital, and a portion of the Right Shares did not meet the derivative scope exception or equity classification criteria and were accounted for as a derivative liability. The Right had an initial fair value of $5.3 million, of which $2.3 million was recorded as additional paid in capital and $3.0 million was recorded as a derivative liability. The Right Shares derivative liability portion will be remeasured each reporting period until settled or extinguished with subsequent changes in fair value recorded through the statement of operations. The fair value of the Right was determined using a Black-Scholes-Merton option pricing

model based on the input assumptions for liability classified warrants table in the valuation methodology section below. At March 31, 2020, the fair value of the Right Shares derivative liability portion was $2.0 million, and the Company recorded a $1.0 million gain on change in fair value of derivative instruments during the three months ended March 31, 2020. On May 29, 2020, the Company obtained stockholder approval to increase its authorized common share count from 250 million to 350 million. As a result, the portion of the Right Shares initially accounting for as a derivative liability was no longer precluded from the derivative scope exception and met the criteria for equity classification. In the three months ended June 30, 2020, the Company recorded a $1.8 million final mark-to-market loss on change in fair value of derivative instruments using a Black-Scholes-Merton option pricing model based on the input assumptions for liability classified warrants table in the valuation methodology section below, and derecognized the $3.7 million derivative liability balance into additional paid in capital.

In connection with the January 31, 2020 Debt Equitization transaction with Foris, which was accounted for as a debt extinguishment as discussed in Note 4, "Debt" and Note 6, "Stockholders' Deficit", the Company issued rights (the Right) to purchase up to of 8.8 million shares of common stock at $2.87 per share for 12 months from the issuance date. The Company concluded that the Right met the derivative scope exception and criteria to be accounted for in equity. The Right had a fair value of $8.9 million which was recorded as additional paid in capital and a charge to loss upon extinguishment of debt. The fair value of the Right was determined using a Black-Scholes-Merton option pricing model based on the input assumptions for liability classified warrants table in the valuation methodology section below.

During the second half of 2019, the Company issued five freestanding liability warrants related to the September 2019 and November 2019 Schottenfeld Notes (the Schottenfeld Notes), which the Company recorded at fair value as a derivative liability and debt discount on the respective issuance dates (see Note 4, "Debt" for further information). These freestanding liability warrants had a collective fair value of $7.0 million at December 31, 2019. As a result of the Foris Debt Equitization transaction on January 31, 2020, the variability causing these instruments to be recorded as a derivative liability was eliminated and upon derecognition of this liability into equity, the Company recorded a $1.8 million gain on change in fair value of derivative instruments for the year ended December 31, 2020, using a Black-Scholes-Merton option pricing model based on the input assumptions for liability classified warrants table in the valuation methodology section below, and reclassified the derivative liability balance of $5.2 million to additional paid in capital.

On February 28, 2020, the Company entered into forbearance agreements with certain affiliates of the Schottenfeld Group LLC (the Lenders) related to certain defaults under the Schottenfeld Notes. The transaction was accounted for as a debt extinguishment. See Note 4, "Debt" for further information. In connection with entering into the forbearance agreements, the Company committed to issuing new warrants (the New Warrants) to the Lenders under certain contingent events for 1.9 million shares of common stock at a $2.87 purchase price and a two-year term. The contingent obligation to issue the New Warrants did not meet the derivative scope exception or equity classification criteria and were accounted for as a derivative liability. The contingently issuable New Warrants derivative liability had an initial fair value of $3.2 million and was recorded as a derivative liability with a $3.2 million charge to loss upon extinguishment of debt. The New Warrants derivative liability will be remeasured each reporting period until settled or extinguished with subsequent changes in fair value recorded through the statement of operations. The fair value of the New Warrants derivative liability was determined using a Black-Scholes-Merton option pricing model based on the input assumptions for liability classified warrants table in the valuation methodology section below. At December 31, 2020, the fair value of the contingently issuable New Warrants derivative liability was $8.5 million, and the Company recorded a $5.3 million loss on change in fair value of derivative instruments for the year ended December 31, 2020.

On April 6, 2020, the Company and Total entered into a Senior Convertible Note Maturity Extension Agreement to extend the maturity date of the 2014 Rule 144A Convertible Note to April 30, 2020 and reduce the conversion

price from $56.16 to $2.87 per share. See Note 4, "Debt" for further information. Historically, the embedded conversion option was bifurcated and accounted for as a derivative liability, and at December 31, 2019 and March 31, 2020 had a $0 fair value due to the Note's short maturity and the significant conversion price differential when compared to the Company's current stock price. As a result of the conversion price reduction, the Company remeasured the fair value of the conversion option using a Black-Scholes-Merton option pricing model based on the input assumptions for liability classified warrants table in the valuation methodology section below, and recorded a $6.5 million loss on change in fair value of derivative instruments in the three months ended June 30, 2020. On June 2, 2020, Total elected to convert all the outstanding principal and interest under the 2014 Rule 144A Convertible Note totaling $9.3 million into 3,246,489 shares of common stock. Upon conversion, the $6.5 million liability was derecognized into additional paid in capital, along with the debt principal and interest balance.

Bifurcated Embedded Features in Debt Instruments

During the second half of 2019, the Company issued four debt instruments with embedded mandatory redemption features which were bifurcated from the debt host instruments and recorded at fair value as a derivative liability and debt discount. The collective fair value of the four bifurcated derivatives totaled $2.8 million at December 31, 2019. In January and February 2020, the Company again modified certain key terms in three of the four underlying debt instruments, resulting in a debt extinguishment of the three modified debt instruments. Consequently, in the three months ended March 31, 2020, the collective fair value of the three extinguished bifurcated derivatives totaling $2.3 million was recorded as a loss upon extinguishment of debt and the $0.9 million collective fair value of the new bifurcated embedded mandatory redemption features was recorded as a derivative liability and new debt discount at the modification date. Also, one of the bifurcated features was embedded in the Foris LSA, which was modified and accounted for as an extinguishment in the three months ended June 30, 2020. As a result of the extinguishment accounting treatment, the $0.7 million derivative liability balance was derecognized and recorded into the initial fair value of the new Foris Convertible Note (see "Fair Value of Debt – Foris Convertible Note (LSA Amendment)" above). The fair value of the bifurcated derivative liability was determined using a probability weighted discounted cash flow analysis which is discussed in the valuation methodology and approach section below. At December 31, 2020, the fair value of the bifurcated embedded mandatory redemption features totaled $0.2 million, and the Company recorded a $0.4 million gain on change in fair value derivative instruments during the year ended December 31, 2020.

Valuation Methodology and Approach to Measuring the Derivative Liabilities

The liabilities associated with the Company's freestanding and compound embedded derivatives outstanding at December 31, 2020 and 2019 represent the fair value of freestanding equity instruments and mandatory redemption features embedded in certain debt instruments. See Note 4, "Debt", and Note 6, "Stockholders' Deficit" for further information regarding these host instruments. There is no current observable market for these types of derivatives and, as such, the Company determined the fair value of the freestanding instrument or embedded derivatives using the Black-Scholes-Merton option pricing model, or a probability-weighted discounted cash flow analysis, measuring the fair value of the debt instrument both with and without the embedded feature, both of which are discussed in more detail below.

The Company uses the Black-Scholes-Merton option pricing model to determine the fair value of its liability classified warrants as of December 31, 2020 and 2019. Input assumptions for these freestanding instruments measured during the 12 months ended December 31, 2020 and 2019 were as follows:

Year ended December 31,	2020	2019
Fair value of common stock on valuation date	$2.56 -$6.18	$3.09 -$4.76
Exercise price of warrants	$2.87 - $3.25	$3.87 - $3.90
Expected volatility	94% - 117%	94% - 105%
Risk-free interest rate	0.13% - 1.58%	1.58% - 1.67%
Expected term in years	1.00 - 2.00	1.51 - 2.00
Dividend yield	0%	0%

The Company uses a probability weighted discounted cash flow model to measure the fair value of the mandatory redemption features embedded in the four debt instruments issued in the second half of 2019. The model is designed to measure and determine if the debt instruments would be called or held at each decision point. Within the model, the following assumption is made: the underlying debt instrument will be called early if the change in control redemption value is greater than the holding value. If the underlying debt instrument is called, the holder will maximize their value by finding the optimal decision between (i) redeeming at the redemption price and (ii) holding the instrument until maturity. Using this assumption, the Company valued the embedded derivatives on a "with-and-without method", where the fair value of each underlying debt instrument including the embedded derivative is defined as the "with", and the fair value of each underlying debt instrument excluding the embedded derivatives is defined as the "without". This method estimates the fair value of the embedded derivatives by comparing the fair value differential between the with and without mandatory redemption feature. The model incorporates the mandatory redemption price, time to maturity, risk-free interest rate, estimated credit spread and estimated probability of a change in control default event.

The market-based assumptions and estimates used in valuing the embedded derivative liabilities include values in the following ranges/amounts:

Year ended December 31,	2020	2019
Risk-free interest rate	0.1% - 1.6%	1.6% - 1.7%
Risk-adjusted discount yield	18.0% - 27.0%	20.0% - 27.0%
Stock price volatility	96% - 214%	45%
Probability of change in control	5.0%	5.0%
Stock price	$2.56 - $6.18	$2.09 - $4.76
Credit spread	17.9% - 36.8%	18.4% - 25.4%
Estimated conversion dates	2022 - 2023	2022 - 2023

Changes in valuation assumptions can have a significant impact on the valuation of the embedded and freestanding derivative liabilities and debt that the Company elects to account for at fair value. For example, all other things being held constant, generally an increase in the Company's stock price, change of control probability, risk-adjusted yield term to maturity/conversion or stock price volatility increases the value of the derivative liability.

Assets and Liabilities Recorded at Carrying Value

Financial Assets and Liabilities

The carrying amounts of certain financial instruments, such as cash equivalents, accounts receivable, prepaid expenses and other current assets, accounts payable and accrued liabilities, approximate fair value due to their relatively short maturities and low market interest rates, if applicable. Loans payable and credit facilities are recorded at carrying value, which is representative of fair value at the date of acquisition. The Company estimates the fair value of these instruments using observable market-based inputs (Level 2). The carrying amount (the total amount of net debt presented on the balance sheet) of the Company's debt at December 31, 2020 and at December 31, 2019, excluding the debt instruments recorded at fair value, was $86.5 million and $195.8 million, respectively. The fair value of such debt at December 31, 2020 and at December 31, 2019 was $83.3 million and $194.8 million, respectively, and was determined by (i) discounting expected cash flows using current market discount rates estimated for certain of the debt instruments and (ii) using third-party fair value estimates for the remaining debt instruments.

4. Debt

	2020				2019			
(In thousands)	Principal	Unaccreted Debt (Discount) Premium	Fair Value Adjustment	Net	Principal	Unaccreted Debt (Discount) Premium	Fair Value Adjustment	Net
Convertible notes payable								
Senior convertible notes	$ 30,020	$ —	$23,367	$ 53,387	$ 66,000	$ —	$(15,376)	$ 50,624
	30,020	—	23,367	53,387	66,000	—	(15,376)	50,624
Related party convertible notes payable								
Foris convertible note	50,041	—	73,123	123,164	—	—	—	—
Total 2014 Rule 144A convertible note	—	—	—	—	10,178	—	—	10,178
	50,041	—	73,123	123,164	10,178	—	—	10,178
Loans payable and credit facilities								
Schottenfeld notes	12,500	(240)	—	12,260	20,350	(1,315)	—	19,035
Ginkgo note	12,000	—	—	12,000	12,000	(3,139)	—	8,861
Nikko notes	2,802	(759)	—	2,043	14,318	(901)	—	13,417
Other loans payable	1,227	—	—	1,227	1,828	—	—	1,828
	28,529	(999)	—	27,530	48,496	(5,355)	—	43,141
Related party loans payable								
DSM notes	33,000	(2,443)	—	30,557	33,000	(4,621)	—	28,379
Naxyris note	23,914	(493)	—	23,421	24,437	(822)	—	23,615
Foris notes	5,000	—	—	5,000	115,351	(9,516)	—	105,835
	61,914	(2,936)	—	58,978	172,788	(14,959)	—	157,829
Total debt	$170,504	$(3,935)	$96,490	263,059	$297,462	$(20,314)	$(15,376)	261,772
Less: current portion				(77,437)				(63,805)
Long-term debt, net of current portion				$185,622				$197,967

Future minimum payments under the debt agreements as of December 31, 2020 are as follows:

Years ending December 31 (In thousands)	Convertible Notes	Loans Payable and Credit Facilities	Related Party Convertible Notes	Related Party Loans Payable and Credit Facilities	Total
2021	$ 33,897	$ 4,249	$ —	$ 31,823	$ 69,969
2022	—	14,769	59,578	40,940	115,287
2023	—	12,899	—	—	12,899
2024	—	398	—	—	398
2025	—	396	—	—	396
Thereafter	—	1,472	—	—	1,472
Total future minimum payments	33,897	34,183	59,578	72,763	200,421
Less: amount representing interest[1]	(3,877)	(5,654)	(9,537)	(10,849)	(29,917)
Less: future conversion of accrued interest to principal	—	—	—	—	—
Present value of minimum debt payments	30,020	28,529	50,041	61,914	170,504
Less: current portion of debt principal	(30,020)	(1,495)	—	(25,000)	(56,515)
Noncurrent portion of debt principal	$ —	$27,034	$50,041	$ 36,914	$113,989

[1] Excluding net debt discount of $3.9 million that will be amortized to interest expense over the term of the debt.

Exchange of Senior Convertible Notes

On January 14, 2020, the Company completed the exchange of the Company's $66 million Senior Convertible Notes (or the Prior Notes), pursuant to separate exchange agreements (the Exchange Agreements) with certain private investors (the Holders), for (i) new senior convertible notes in an aggregate principal amount of $51 million (the New Notes or Senior Convertible Notes), (ii) an aggregate of 2,742,160 shares of common stock (the Exchange Shares), (iii) rights (the Rights) to acquire up to an aggregate of 2,484,321 shares of common stock (the Rights Shares), (iv) warrants (the Warrants) to purchase up to an aggregate of 3,000,000 shares of common stock (the Warrant Shares) at an exercise price of $3.25 per share, with an exercise term of two years from issuance, (v) accrued and unpaid interest on the Senior Convertible Notes (payable on or prior to January 31, 2020) and (vi) cash fees in an aggregate amount of $1.0 million (payable on or prior to January 31, 2020). The Exchange Shares and Warrants were issued on January 14, 2020. The unpaid interest and cash fees were paid in accordance with the Exchange Agreements. The Rights were exercised by the Holder and common stock shares issued by the Company according to the terms of the Senior Convertible Notes on February 24, 2020.

The New Notes have substantially similar terms as the Prior Notes, except under the New Notes (i) the requirement to redeem an aggregate principal amount of $10 million on December 31, 2019 was eliminated, (ii) the Company would be required to redeem the New Notes in an aggregate amount of $10 million following the receipt by the Company of at least $80 million of aggregate net cash proceeds from one or more financing transactions, and at a price of 107% of the amount being redeemed, (iii) the financing activity requirement was reduced such that the Company would be required to raise aggregate net cash proceeds of $50 million from one or more financing transactions by January 31, 2020, (iv) the Company would have until January 31, 2020 to comply with certain covenants related to the repayment, conversion or exchange into equity or amendment of certain outstanding indebtedness of the Company, and (v) the deadline for the Company to seek stockholder approval for the Holders to exceed a 19.99% stock exchange ownership limitation (the Stockholder Approval) would be extended from January 31, 2020 to March 15, 2020.

Due to multiple changes in key provisions of the Prior Notes, the Company analyzed the before and after cash flows between the (i) fair value of the New Notes and (ii) reacquisition price of the Prior Notes resulting from the (A) decreased principal from $66 million to $51 million, (B) fair value of the Exchange Shares, (C) fair value of the

Rights, (D) fair value of the Warrants and (E) cash fees to be paid prior to January 31, 2020 to determine whether these changes resulted in a modification or extinguishment of the Prior Notes. Based on the before and after cash flows of each note, the change was significantly different. Consequently, the Exchange Agreements were accounted for as a debt extinguishment of the Prior Notes and a new debt issuance of the New Notes. The Company recorded a $5.3 million loss upon extinguishment of debt in the three months ended March 31, 2020, which was comprised of the $4.1 million fair value of the Warrants (considered a non-cash fee paid to the lender), the $1.0 million cash fee and $0.2 million excess fair value of the Exchange Shares and the Rights Shares over the contractual value. See Note 6, "Stockholders' Deficit" for further information on the accounting treatment of the Exchange Shares and the Rights Shares upon issuance of the New Notes. Also, see Note 3, "Fair Value Measurement" for more information regarding the valuation methodology used to determine the fair value of the Warrants.

The Company elected to account for the New Notes at fair value, as of the January 14, 2020 issuance date. Management believes that the fair value option better reflects the underlying economics of the Senior Convertible Notes, which contain multiple embedded derivatives. Under the fair value election, changes in fair value will be reported in the consolidated statements of operations as "Gain (loss) from change in fair value of debt" in each reporting period subsequent to the issuance of the New Notes. For the three months ended March 31, 2020, the Company recorded a loss of $1.1 million, which is shown as Fair Value Adjustment in the table at the beginning of this Note 4. See Note 3, "Fair Value Measurement" for information about the assumptions that the Company used to measure the fair value of the Senior Convertible Notes.

On February 18, 2020, the Company and the Holders entered into separate waiver and forbearance agreements, (the W&F Agreements), pursuant to which the Holders agreed to, for 60 days following the date of the W&F Agreement, except in case of early termination of the W&F Agreement or, solely with respect to the Stockholder Approval if the other defaults described below have been cured on or prior to the date that is 60 days following the date of the W&F Agreement, until May 31, 2020 (the W&F Period), and in each case subject to certain conditions to effectiveness contained in the W&F Agreement, (i) forbear from exercising certain of their rights and remedies with respect to certain defaults by the Company, including, but not limited to, the Company's failure, on or before January 31, 2020, (A) to receive aggregated net cash proceeds of not less than $50 million from one or more financing transactions, (B) to repay in full or convert into equity the $20.4 million of indebtedness outstanding under the Schottenfeld Credit Agreements (discussed under the Schottenfeld Forbearance Agreement below) or amend all such indebtedness outstanding to fit within the definition of permitted indebtedness of the New Notes, and certain other events of default, and (ii) waive any event of default for (A) violations of the minimum liquidity covenant since December 31, 2019 and (B) failure to obtain the Stockholder Approval prior to March 15, 2020.

In addition, pursuant to the W&F Agreements, the Company and the Holders agreed that (i) the New Note amortization payment due on March 1, 2020 would be in the aggregate amount of $10.0 million (the Amortization Payment), split proportionally among the Holders, and that the Company would elect to pay such amortization payment in shares of Common Stock in accordance with the terms of the New Notes, provided however, that: (A) the Amortization Stock Payment Price (as defined in the New Notes) would be $3.00, (B) the Amortization Share Payment Period (as defined in the New Notes) with respect to the Amortization Payment would end on April 30, 2020 rather than March 31, 2020; and (C) in the event that Holder did not elect to receive the full Amortization Share Amount (as defined in the New Notes) during such Amortization Share Payment Period, then the Amortization Payment would be automatically reduced by the portion of such Amortization Payment not received by the Holder, (ii) there would be no amortization payment due on April 1, 2020, and (iii) the amortization payment due on May 1, 2020 would be in the aggregate amount of $8.9 million split proportionally among the Holders. The W&F Agreements were accounted for as a debt modification, as the before and after cash flows were not significantly different.

Amendment to Senior Convertible Notes

On May 1, 2020, the Company and the holders of the Senior Convertible Notes entered into separate amendments to the New Notes and the W&F Agreements (Note Amendment), pursuant to which the Company and the Holders agreed: (i) to amend the maturity date of the New Notes from September 30, 2022 to June 1, 2021 (Maturity Date); (ii) to remove from the New Notes all equity triggering provisions that allowed the Holders to convert the notes at a reduced conversion price in certain circumstances other than events of default; (iii) that the Company would no longer be required to redeem the New Notes in an aggregate amount of $10 million following the receipt by the Company of at least $80 million of aggregate net cash proceeds from one or more financing transactions; (iv) that interest payments would be due quarterly (as opposed to monthly), starting on August 1, 2020; (v) that an aggregate amortization payment of approximately $16.4 million (split proportionally among the Holders) would be due on or before the earlier of May 31, 2020 and the date on which the Company receives at least $50 million of aggregate net proceeds in an offering of securities (Amended May Amortization), an amortization payment of $5 million (to the largest Holder) would be due on December 1, 2020 unless the Company receives at least $50 million of aggregate net cash proceeds from one or more financing transactions after May 1, 2020, and no other amortization payment would be due prior to the Maturity Date; (vi) to reduce the conversion price of the New Notes from $5.00 to $3.50; (vii) to reduce the redemption price with respect to optional redemptions by the Company prior to October 1, 2020 to 100%, prior to December 31, 2020 to 105% and to 110% thereafter (as opposed to 115%), of the amount being redeemed; and (viii) that an aggregate of 2,836,364 shares of Common Stock held by the Holders would not be considered as Pre-Delivery Shares (issued in connection with the November 15, 2019 Senior Convertible Notes Due 2022 and as defined in the New Notes) and would be subject to certain selling restrictions until June 15, 2020, and that an aggregate of 1,363,636 Pre-Delivery Shares held by certain Holders would be promptly returned to the Company. These Pre-Delivery Shares were returned to the Company on May 5, 2020 and May 6, 2020. The Company paid $16.4 million on June 1, 2020 to satisfy the required amortization payment and is no longer required to make the $5.0 million amortization payment on December 1, 2020. On June 4, 2020, the Company released an additional 700,000 Pre-Delivery Shares to the largest Holder in connection with the Second Amendment to New Notes and the W&F Agreements. The Company recorded $10.5 million of additional interest expense, representing the fair value of the 3,536,364 Pre-Delivery Shares released to the Holders.

Further, in connection with the Note Amendment, the Company and the Holders entered into certain warrant amendment agreements pursuant to which (i) the exercise price of the warrants issued on January 14, 2020 in connection with the Exchange of the Senior Convertible Notes was reduced to $2.87 per share, from $3.25, with respect to an aggregate of 2,000,000 warrant shares; (ii) the exercise price of a warrant to purchase 960,225 shares of the Company's Common Stock issued to one of the Holders on May 10, 2019 was reduced to $2.87 per share, from $5.02, and the exercise term of such warrant was extended to January 31, 2022, from May 10, 2021; and (iii) the exercise term of a right to purchase 431,378 shares of the Company's Common Stock issued to one of the Holders on January 31, 2020 was extended to January 31, 2022, from January 31, 2021. See Note 6, "Stockholders' Deficit" for more information regarding the accounting treatment of these warrant modifications.

The Company has elected to account for the Senior Convertible Notes at fair value, as of the issuance date. Management believes that the fair value option better reflects the underlying economics of the Senior Convertible Notes, which contain multiple embedded derivatives. Under the fair value election, changes in fair value will be reported in the consolidated statements of operations as "Gain (loss) from change in fair value of debt" in each reporting period subsequent to the issuance of the Senior Convertible Notes. For the year ended December 31, 2020, the Company recorded a loss of $38.7 million, which is shown as Fair Value Adjustment in the table at the beginning of this Note 4. See Note 3, "Fair Value Measurement" for information about the assumptions that the Company used to measure the fair value of the Senior Convertible Notes.

2014 Rule 144A Note Exchange and Extensions – Total, Related Party

On March 11, 2020, the Company and Total entered into a Senior Convertible Note Maturity Extension Agreement (the Extension Agreement) due to the Company's failure to pay the $10.2 million principal amount due under the December 20, 2019 reissued 2014 Rule 144A Convertible Notes that matured on January 31, 2020. The Extension Agreement resulted in the reissuance and extension of the December 20, 2019 promissory note to March 31, 2020. Under the terms of the extension agreement, the Company paid Total $1.5 million to satisfy all accrued but unpaid interest and to reduce the principal balance of the reissued note by $1.1 million. The reissued note: (i) had a maturity date of March 31, 2020, (ii) had a $9.1 million principal amount due, (iii) accrued interest at a rate of 12.0% per annum, and (iv) had terms substantially identical to the December 20, 2019 promissory note. The Extension Agreement was accounted for as a debt modification, as the before and after cash flows were not significantly different.

On April 6, 2020, the Company and Total entered into a Senior Convertible Note Maturity Extension Agreement to extend the maturity date of the 2014 Rule 144A Convertible Note to April 30, 2020 and reduce the conversion price of the 2014 Rule 144A Convertible Note to $2.87 per share. Effective April 30, 2020, the Company and Total entered into a subsequent Senior Convertible Note Maturity Extension Agreement to extend the maturity date of the 2014 Rule 144A Convertible Note to the earlier of the day the Company receives cash proceeds from any private placement of its equity and/or equity-linked securities, and May 31, 2020. The 2014 Rule 144A Convertible Note was reissued as a result of such extensions with terms substantially identical to the previously issued promissory notes. On June 2, 2020, Total elected to convert all the outstanding principal and interest due under the 2014 Rule 144A Convertible Note totaling $9.3 million into 3,246,489 shares of common stock. Upon conversion, the $9.3 million debt principal and interest balance and the $6.5 million derivative liability balance related to the fair value of the conversion option was derecognized into additional paid in capital. See Note 3, "Fair Value Measurement" for more information regarding the accounting treatment of the embedded conversion option and subsequent conversion price reduction.

Foris Debt Transactions—Related Party

The Company has loans payable to Foris Ventures, LLC (Foris) with a total principal balance of $55.0 million at December 31, 2020. Foris is an entity affiliated with director John Doerr of Kleiner Perkins Caufield & Byers, a current stockholder, and an owner of greater than five percent of the Company's outstanding common stock. The notes payable to Foris are comprised of the following (amounts in thousands):

Description	Date Issued	Original Loan Amount	Balance at December 31, 2020	Interest Rate per Annum	Maturity Date
Foris Convertible Note	June 1, 2020	$50,041	$50,041	6%	July 1, 2022
Foris $5M Note	April 29, 2020	5,000	5,000	12%	December 31, 2022
		$55,041	$55,041		

Debt Equitization – Foris, Related Party

At December 31, 2019, the Company had two loans payable to Foris with a total principal balance of $110.0 million, excluding capitalized interest of $5.3 million. The first loan (Foris $19 million Note) was a $19 million unsecured borrowing that accrued interest at 12% per annum and matures on January 1, 2023. The second loan (Foris LSA) is a $91.0 million secured borrowing that accrues interest at 12.5% per annum and matured on March 1, 2023. The Foris LSA required quarterly principal payments and monthly interest payments. See Amendment No. 1 to Amended and Restated LSA — Foris, Related Party below for more information on the maturity date and payment terms of the Foris LSA.

On January 31, 2020, the Company completed a series of equity transactions with Foris that resulted in the Company (i) reducing its aggregate debt principal with Foris by $60.0 million and accrued interest and fees due to Foris by $9.9 million (including $5.4 million of capitalized interest), (ii) issuing an aggregate of 19,287,780 shares of common stock as a result of the exercise of outstanding warrants at a weighted average exercise price of approximately $2.84 per share for an aggregate of $54.8 million, (iii) issuing an aggregate of 5,279,171 shares of common stock at $2.87 per share for an aggregate of $15.1 million in a private placement, and (iv) issuing rights (the Rights) to purchase an aggregate of 8,778,230 shares of common stock, at an exercise price of $2.87 per share, for an exercise term of 12 months. The exercise price of the outstanding warrants and the purchase price of the private placement common stock was paid through the cancellation of principal and accrued interest and fees totaling $69.9 million. See Note 6, "Stockholders' Deficit" for information on the accounting treatment of the various equity related instruments.

As a result of the transaction described above, on January 31, 2020, the principal balance of the Foris $19 million Note and accrued but unpaid interest was fully settled through the exercise price of certain of outstanding warrants. Upon settlement of the Foris $19 million Note, the Company recorded a $5.7 million loss upon extinguishment debt, which was comprised of $6.1 million of unaccreted discount, less the $0.4 million fair value of the extinguished bifurcated derivative liability.

In addition, this series of equity transactions directly impacted the cash flows of the Foris LSA and, as a result, the Company analyzed the before and after cash flows resulting from the significant decrease in principal, the warrant exercise price modifications and the issuance rights to purchase additional shares of common stock at $2.87, to determine whether these changes result in a modification or extinguishment of the Foris LSA. Based on the before and after cash flows, the change was significantly different. Consequently, the accelerated paydown of the Foris LSA loan balance through the exercise price of the remaining outstanding warrants and the purchase price of the private placement common stock was accounted for as a debt extinguishment and a new debt issuance. The Company recorded a $10.4 million loss upon extinguishment of debt, which was comprised of $8.9 million fair value of the Rights and $3.1 million of unaccreted discount, less the $1.6 million fair value of the extinguished bifurcated derivative liability. See Note 6, "Stockholders' Deficit" for further information on the valuation methodology and related accounting treatment of the Rights. In recording the new debt issuance, the Company capitalized $0.7 million for the initial fair value of the embedded mandatory redemption feature as a debt discount to be amortized to interest expense under the effective interest method over the term of the remaining term of the new debt issuance.

Amendment No. 1 to Foris LSA (Foris Convertible Note) — Related Party

On June 1, 2020, the Company and Foris entered into Amendment No. 1 to the Foris LSA (LSA Amendment), pursuant to which: (i) the interest rate applicable to the then outstanding secured indebtedness (Secured Indebtedness) was amended from and after June 1, 2020 to a per annum rate of interest equal to 6.00% (previously 12.5%), (ii) the Company shall not be required to make any interest payments outstanding as of May 31, 2020 or accruing thereafter prior to July 1, 2022 (previously due monthly), (iii) the quarterly principal amortization payments were eliminated and all outstanding principal under the LSA Amendment became due on July 1, 2022, and (iv) Foris shall have the option, in its sole discretion, to convert all or portion of the Secured Indebtedness, including accrued interest, into shares of common stock at a $3.00 conversion price (Conversion Option), subject to the Company's stockholder approval to issue shares of common stock upon exercise of the Conversion Option in accordance with applicable rules and regulations of the Nasdaq Stock Market, including Nasdaq Listing Standard Rule 5635(d); for which stockholder approval was obtained on August 14, 2020.

The Company analyzed the before and after cash flows resulting from the LSA Amendment to determine whether these changes result in a modification or extinguishment of the Foris LSA. Based on the before and after cash flows, the change was significant. Consequently, the LSA Amendment was accounted for as a debt extinguishment and a

new debt issuance. The Company elected to account for the new debt issuance under the fair value option and recorded a $22.0 million loss upon extinguishment of the Foris LSA, representing the difference between the carrying value of the Foris LSA prior to the modification and the $72.1 million reacquisition price of the Foris LSA (which is the fair value of the LSA Amendment with the conversion option). Management believes the fair value option best reflects the underlying economics of the LSA Amendment, which contains embedded derivatives, a conversion option requiring bifurcation and a beneficial conversion feature. Under the fair value election, changes in fair value will be reported in the consolidated statements of operations as "Gain (loss) from change in fair value of debt" in each reporting period subsequent to the issuance of the LSA Amendment (Foris Convertible Note). The Company also recorded gains of $23.1 million and $13.6 million for the three and nine months ended September 30, 2020 related to the change in fair value of the LSA Amendment (Foris Convertible Note) after the June 1, 2020 issuance date, which is shown as Fair Value Adjustment in the table at the beginning of this Note 4. See Note 3, "Fair Value Measurement" for information about the assumptions that the Company used to measure the fair value of the LSA Amendment (Foris Convertible Note).

Foris $5 Million Note – Related Party

On April 29, 2020, the Company borrowed $5.0 million from Foris, an entity affiliated with director John Doerr and which beneficially owns greater than 5% of the Company's outstanding common stock. The note is unsecured and accrues interest at 12% per annum. Principal and interest will be payable at maturity, on December 31, 2022.

Naxyris LSA – Related Party

On August 14, 2019, the Company, certain of the Company's subsidiaries (the Subsidiary Guarantors) and, as lender, Naxyris, an existing stockholder of the Company and an investment vehicle owned by Naxos Capital Partners SCA Sicar, which is affiliated with NAXOS S.A.R.L. (Switzerland), for which director Carole Piwnica serves as director, entered into a Loan and Security Agreement (the Naxyris Loan Agreement) to make available to the Company a secured term loan facility in an aggregate principal amount of up to $10.4 million (the August 2019 Naxyris Loan), which the Company borrowed in full on August 14, 2019. In connection with the funding of the August 2019 Naxyris Loan, the Company paid Naxyris an upfront fee of $0.4 million.

Loans under the August 2019 Naxyris Loan have a maturity date of July 1, 2022 and accrue interest at a rate per annum equal to the greater of (i) 12% or (ii) the rate of interest payable with respect to any indebtedness of the Company plus 25 basis points, which interest will be payable monthly in arrears, provided that all interest accruing from and after August 14, 2019 through December 1, 2019 shall be due and payable on December 15, 2019.

The obligations of the Company under the Naxyris Loan Agreement are (i) guaranteed by the Subsidiary Guarantors and (ii) secured by a perfected security interest in substantially all of the assets of the Company and the Subsidiary Guarantors (the Collateral), junior in payment priority to Foris subject to certain limitations and exceptions, as well as the terms of the Intercreditor Agreement.

Mandatory prepayments of the outstanding amounts under the August 2019 Naxyris Loan will be required upon the occurrence of certain events, including asset sales, a change in control, and the incurrence of additional indebtedness, subject to certain exceptions and reinvestment rights. Outstanding amounts under the August 2019 Naxyris Loan must also be prepaid to the extent that the borrowing base exceeds the outstanding principal amount of the loans under the August 2019 Naxyris Loan. In addition, the Company may at its option prepay the outstanding principal amount of the loans under the August 2019 Naxyris Loan in full before the maturity date. Any prepayment of the loans under the August 2019 Naxyris Loan prior to the maturity date, whether pursuant to a mandatory or optional prepayment, is subject to a prepayment charge equal to one year's interest at the then-current interest rate for the August 2019 Naxyris Loan. Upon any repayment of the loans under the August 2019 Naxyris Loan, whether on the maturity date or earlier pursuant to an optional or mandatory prepayment, the

Company will pay Naxyris an end of term fee based on a percentage of the aggregate amount borrowed. In addition, (i) the Company will be required to pay a fee equal to 6% of any amount the Company fails to pay within three business days of its due date and (ii) any interest that is not paid when due will be added to principal and will accrue compound interest at the applicable rate.

The August 2019 Naxyris Loan contains customary affirmative and negative covenants and financial covenants, including covenants related to minimum revenue, minimum liquidity and minimum asset coverage requirements.

The August 2019 Naxyris Loan also contained a mandatory redemption feature that was not clearly and closely related to the debt host instrument, and thus, required bifurcation and separate accounting as a derivative liability. The embedded feature had an initial fair value of $0.3 million and was recorded as a derivative liability and a debt discount to be amortized to interest expense under the effective interest method over the term of the August 2019 Naxyris Loan. See Note 3, "Fair Value Measurement" for information regarding the fair value measurement and subsequent accounting for the embedded mandatory redemption feature.

In connection with the entry into the August 2019 Naxyris Loan, on August 14, 2019 the Company issued to Naxyris a warrant (the Naxyris LSA Warrant) to purchase up to 2.0 million shares of common stock at an exercise price of $2.87 per share, with an exercise term of two years from issuance. See Note 6, "Stockholders' Deficit" for information regarding the fair value measurement and issuance of this warrant. The warrant had a $4.0 million fair value and a $3.0 million relative fair value after allocating the August 2019 Naxyris Loan proceeds to the $0.3 million fair value of the embedded mandatory redemption feature contained in the August 2019 Naxyris Loan, and allocating on a residual basis, to the relative fair values of the August 2019 Naxyris Loan and the Naxyris LSA Warrant. The $3.0 million relative fair value of the Naxyris LSA Warrant was recorded as an increase to additional paid in capital and as a debt discount to be amortized to interest expense under the effective interest method over the term of the August 2019 Naxyris Loan.

In addition to the $3.0 million relative fair value of the Naxyris LSA Warrant and the $0.3 million fair value of the embedded mandatory redemption feature, the August 2019 Naxyris Loan contained $0.4 million original issue discount, $0.5 million mandatory end of term fee and $0.3 million of issuances costs, all totaling $4.5 million. All such amounts were recorded as a debt discount to be amortized to interest expense over the term of the August 2019 Naxyris Loan.

Naxyris LSA Amendment – Related Party

On October 28, 2019, the Company, the Subsidiary Guarantors and Naxyris amended and restated the Naxyris Loan Agreement (the A&R Naxyris LSA), pursuant to which the maximum loan commitment of Naxyris under the Naxyris Loan Agreement was increased by $10.4 million. On October 29, 2019, the Company borrowed an additional $10.4 million (the October 2019 Naxyris Loan) from Naxyris under the A&R Naxyris LSA, which is subject to the terms and provisions of the A&R Naxyris LSA, including the lien on substantially all of the assets of the Company and the Subsidiary Guarantors. Also, under the terms of A&R Naxyris LSA, the Company owes a 5% end of term fee on the October 2019 Naxyris Loan amount and a $2.0 million term loan fee, both of which are due at July 1, 2022 maturity or upon full repayment of the amounts borrowed under the A&R Naxyris LSA. Also, the Company paid Naxyris an upfront fee of $0.4 million at the funding date of the October 2019 Naxyris Loan. After giving effect to the October 2019 Naxyris Loan amount, there is $24.4 million aggregate principal amount of loans outstanding under the A&R Naxyris LSA.

Also, in connection with the entry into the A&R Naxyris LSA, on October 28, 2019 the Company issued to Naxyris a warrant to purchase up to 2.0 million shares of common stock, at an exercise price of $3.87 per share, with an exercise term of two years from issuance (the October 2019 Naxyris Warrant). The warrant had a $3.6 million fair value and a $2.8 million relative fair value after allocating the October 2019 Naxyris Loan proceeds to the

$0.5 million fair value of the embedded mandatory redemption feature contained in the October 2019 Naxyris Loan, and allocating on a residual basis, to the relative fair values of the October 2019 Naxyris Loan and the October 2019 Naxyris Warrant. The $2.8 million relative fair value of the October 2019 Naxyris Warrant was recorded as an increase to additional paid in capital and as a loss on debt extinguishment (as discussed below).

Due to changes in key terms of the Naxyris Loan Agreement through the addition of the October 2019 Naxyris Loan, the Company analyzed the before and after cash flows under the August 2019 Naxyris Loan and October 2019 Naxyris Loan in order to determine if these changes result in a modification or extinguishment of the original Naxyris Loan Agreement. Based on the combined before and after cash flows related to the increased principal balance, increased end of term fees and the fair value of new warrants provided to Naxyris, the Company determined that the change in cash flows were significantly different. Consequently, the October 2019 Naxyris Loan was accounting for as a debt extinguishment and new debt issuance. The Company recorded a $9.7 million loss on extinguishment comprised of (i) $4.0 million of unamortized debt discount, net of the $0.3 million fair value of the bifurcated embedded mandatory redemption feature, (ii) $2.9 million of original issue discount and end of term fees and (iii) the $2.8 million fair value of the October 2019 Naxyris Warrant (a non-cash fee paid to the lender).

The October 2019 Naxyris Loan contained a mandatory redemption feature that was not clearly and closely related to the debt host instrument, and thus, required bifurcation and separate accounting as a derivative liability. The embedded feature had an initial fair value of $0.5 million and was recorded as a derivative liability and a debt discount to be amortized to interest expense under the effective interest method over the term of the new debt issuance. See Note 3, "Fair Value Measurement" for information regarding the fair value measurement and subsequent accounting for the embedded mandatory redemption feature. The Company also capitalized $0.4 million of legal fees related to the October 2019 Naxyris Loan as a debt discount.

DSM Credit Agreements—Related Party

DSM $25 Million Note

In December 2017, the Company and DSM entered into a credit agreement (the DSM Credit Agreement) to make available to the Company an unsecured credit facility of $25.0 million. On December 28, 2017, the Company borrowed $25.0 million under the DSM Credit Agreement, representing the entire amount available thereunder, and issued a promissory note to DSM in an equal principal amount (the DSM Note). The Company used the proceeds of the amounts borrowed under the DSM Credit Agreement to repay all outstanding principal under a promissory note in the principal amount of $25.0 million issued to Guanfu Holding Co., Ltd. in December 2016. Given multiple elements in the arrangements with DSM, the Company fair valued the DSM Note to determine the arrangement consideration that should be allocated to the DSM Note. The fair value of the DSM Note was discounted using a Company specific weighted average cost of capital rate that resulted in a debt discount of $8.0 million. The debt discount is being amortized over the loan term using the effective interest method.

The DSM Note (i) is an unsecured obligation of the Company, (ii) matures on December 31, 2021 and (iii) accrues interest from and including December 28, 2017 at 10% per annum, payable quarterly. The DSM Note may be prepaid in full or in part at any time without penalty or premium. The DSM Credit Agreement and the DSM Note contain customary terms, covenants and restrictions, including certain events of default after which the DSM Note may become due and payable immediately.

DSM $8 Million Note

On September 17, 2019, the Company and DSM entered into a credit agreement (the 2019 DSM Credit Agreement) to make available to the Company a secured credit facility in an aggregate principal amount of

$8.0 million, to be issued in separate installments of $3.0 million, $3.0 million and $2.0 million, respectively, with each installment being subject to certain closing conditions, including the payment of certain existing obligations of the Company to DSM. On September 17, 2019, the Company borrowed the first installment of $3.0 million under the 2019 DSM Credit Agreement, all of which proceeds were used to pay certain existing obligations of the Company to DSM, and issued to DSM a promissory note in the principal amount of $3.0 million. On September 19, 2019, the Company borrowed the second installment of $3.0 million under the 2019 DSM Credit Agreement, all of which proceeds were used to pay certain existing obligations of the Company to DSM, and issued to DSM a promissory note in the principal amount of $3.0 million. On September 23, 2019, the Company borrowed the final installment of $2.0 million under the 2019 DSM Credit Agreement, $1.5 million of which proceeds were used to pay certain existing obligations of the Company to DSM, and issued to DSM a promissory note in the principal amount of $2.0 million. The promissory notes issued under the 2019 DSM Credit Agreement (i) mature on August 7, 2022, (ii) accrue interest at a rate of 12.5% per annum from and including the applicable date of issuance, which interest is payable quarterly in arrears on each January 1, April 1, July 1 and October 1, beginning January 1, 2020, and (iii) are secured by a first-priority lien on certain Company intellectual property licensed to DSM. The Company may at its option repay the amounts outstanding under the 2019 DSM Credit Agreement before the maturity date, in whole or in part, at a price equal to 100% of the amount being repaid plus accrued and unpaid interest on such amount to the date of repayment. In addition, the Company is required to repay the amounts outstanding under the 2019 DSM Credit Agreement (i) in an amount equal to the gross cash proceeds, if any, received by the Company upon the exercise by DSM of any of the common stock purchase warrants issued by the Company to DSM on May 11, 2017 or August 7, 2017 (see Note 6, "Stockholders' Deficit") and (ii) in full upon the request of DSM at any time following the receipt by the Company of at least $50.0 million of gross cash proceeds from one or more sales of equity securities of the Company on or prior to June 30, 2020. In connection with issuance of the 2019 DSM Credit Agreement, the Company incurred $0.3 million of legal fees which were recorded as a debt discount to be amortized as interest expense under the effective interest method over the term of the 2019 DSM Credit Agreement.

Schottenfeld Forbearance Agreement

The Company, Schottenfeld Group LLC (Schottenfeld) and certain of its affiliates (collectively, the Lenders) are parties (i) to certain Credit Agreements, each dated September 10, 2019 (collectively, the September Credit Agreements) and (ii) to a Credit and Security Agreement, dated November 14, 2019 (the CSA, and collectively with the September Credit Agreements, the Credit Agreements), pursuant to which the Company issued to the Lenders certain notes (the September Notes and the November Notes, respectively, and collectively, the Schottenfeld Notes) and warrants (the September Warrants and the November Warrants, respectively, and collectively, the Schottenfeld Warrants) to purchase shares (the Warrant Shares) of the Company's common stock. See Note 6, "Stockholders' Deficit" for further information. At December 31, 2020, indebtedness under the September Notes totals $12.5 million, accrues interest at 12% per annum and matures on January 1, 2023. Indebtedness under the November Notes total $7.9 million, accrued interest at 12% per annum and originally matured on January 15, 2020. The Company failed to repay the $7.9 million November Notes by January 15, 2020.

On February 28, 2020, the Company entered into a forbearance agreement with the Lenders (Forbearance Agreement), pursuant to which the Lenders would forbear, for 60 days from the date of the Forbearance Agreement, unless terminated earlier (the Forbearance Period), to exercise certain rights as a result of the Company's defaults under the Credit Agreements and related Schottenfeld Notes, including the failure of the Company to (i) to pay all principal and accrued interest on the November Notes at the maturity date, (ii) the failure to pay on or before December 31, 2019, all accrued and unpaid interest through December 31, 2019 on the September Notes, and (iii) the failure, on or before December 15, 2019, to convert or exchange at least $60 million, but not less than 100%, of certain junior outstanding indebtedness into equity in the Company, and certain other events of default. Under the Forbearance Agreement, the Company agreed to (i) pay a late fee of 5%

on any obligations under the November Notes not paid in full on or before the last day of the Forbearance Period; (ii) pay on or prior to the earliest to occur of April 19, 2020 or the last day of the Forbearance Period, (A) all interest due pursuant to the November Notes and the September Notes, plus all interest accruing on such unpaid interest, plus all interest accrued on account of the November Notes and the September Notes from the date of the Forbearance Agreement through the date of such payment, and (B) a forbearance fee in the amount of $150,000; (iii) pay, upon signature of the Forbearance Agreement, $150,000 as a partial payment of the interest that has accrued pursuant to the November Notes and the September Notes as of the date of the Forbearance Agreement; (iv) issue new warrants upon the occurrence of certain contingent events and (v) amend the Schottenfeld Warrants to (A) reduce the exercise price of each Schottenfeld Warrant to $2.87 per share, and (B) with respect to the November Warrants, extend the deadline to register the Warrant Shares for resale by the Holders.

Due to multiple changes in key provisions of Schottenfeld Credit Agreements, the Company analyzed the before and after cash flows resulting from the warrant modification and forbearance fee to determine whether these changes result in a modification or extinguishment of the original Schottenfeld and Phase Five notes. Based on the combined before and after cash flows of each note, the change was significantly different. Consequently, the modifications resulting from the Forbearance Agreement were accounted for as a debt extinguishment and a new debt issuance. The Company recorded a $5.6 million loss upon extinguishment of debt, which was comprised of the $3.2 million fair value of contingent warrant issuance obligation, the $1.3 million incremental fair value of the modified warrants, $1.1 million of unaccreted discount and the forbearance fee, less the balance of the extinguished bifurcated derivative liability. In recording the new debt issuance, the Company capitalized $0.2 million of legal fees and $0.2 million for the initial fair value of the embedded mandatory redemption feature as a debt discount to be amortized to interest expense under the effective interest method over the term of the remaining term of the new debt issuance.

On April 19, 2020, the Company failed to pay the amounts due under the Forbearance Agreement, including the past due interest on the September Notes, and was unable to obtain a waiver or extension for the past due amounts. As a result, $20.4 million of principal outstanding under the Schottenfeld Notes was classified as a current liability on the condensed consolidated balance sheet as of March 31, 2020. On June 5, 2020, the Company repaid the past due November 2019 Notes totaling $7.9 million. Consequently, the September 2019 Notes due January 1, 2023 totaling $12.5 million were reclassified to a non-current liability as of September 30, 2020.

Ginkgo Note, Partnership Agreement and Note Amendment

In November 2017, the Company and Ginkgo Bioworks, Inc. (Ginkgo) entered into a partnership agreement (Ginkgo Partnership Agreement) to replace and supersede the 2016 Ginkgo Collaboration Agreement. Under the Ginkgo Partnership Agreement, the Company and Ginkgo agreed:

- to issue the $12 million November 2017 Ginkgo Note (as defined below), which effectively guarantees Ginkgo $12 million minimum future royalties under the profit margin sharing provisions noted below;
- to pay Ginkgo quarterly fees of $0.8 million (Partnership Payments) for a total of $12.7 million, beginning on December 31, 2018 and ending on September 30, 2022; and
- to share profit margins from sales of a certain product to be developed under the Ginkgo Partnership Agreement on a 50/50 basis, subject to certain conditions, provided that net profits will be payable to Ginkgo for any quarterly period to the extent that such net profits exceed the sum of (a) quarterly interest payments due under the November 2017 Ginkgo Note and (b) Partnership Payments due in such quarter.

The Company recorded the $6.1 million present value of the $12.7 million partnership payments in other liabilities (see Note 2, "Balance Sheet Details"), with the remaining $6.6 million recorded as a debt discount to be recognized as interest expense under the effective interest method over the five-year payment term.

In November 2017, the Company issued an unsecured promissory note in the principal amount of $12.0 million to Ginkgo (the November 2017 Ginkgo Note) in connection with the termination of the 2016 Ginkgo Collaboration Agreement and the execution of the Ginkgo Partnership Agreement. The November 2017 Ginkgo Note accrues interest at 10.5% per annum, payable monthly, and has a maturity date of October 19, 2022. The November 2017 Ginkgo Note may be prepaid in full without penalty or premium at any time, provided that certain payments have been made under the Company's partnership agreement with Ginkgo. The November 2017 Ginkgo Note also contains customary terms, covenants and restrictions, including certain events of default after which the note may become due and payable immediately. The Company recorded the $7.0 million present value of the November 2017 Ginkgo Note as a note payable liability, and the remaining $5.0 million was recorded as a debt discount which is being accreted to interest expense over the loan term using the effective interest method.

On September 29, 2019, in connection with Ginkgo granting certain waivers under the November 2017 Ginkgo Note and the Ginkgo Partnership Agreement, (i) the Company and Ginkgo amended the November 2017 Ginkgo Note to increase the interest rate from 10.5% per annum to 12% per annum, beginning October 1, 2019, (ii) Ginkgo agreed to waive default interest, defer past due interest and partnership payments under the November 2017 Ginkgo Note and Ginkgo Partnership Agreement until December 15 and (iii) the Company agreed to pay a cash waiver fee of $1.3 million, payable in installments of $0.5 million on December 15, 2019 and $0.8 million on March 31, 2020. The Company accounted for this amendment as a modification and accrued the $1.3 million waiver fee in other current liabilities and a charge to interest expense during the year ended December 31, 2019. The Company failed to pay the $5.2 million past due interest, default interest on past due amounts, partnership payments and the $0.5 million waiver fee installment on December 15, 2019.

Ginkgo Waiver Agreement

On March 11, 2020, the Company and Ginkgo Bioworks, Inc. (Ginkgo) entered into a Waiver Agreement and Amendment to Partnership Agreement (the Ginkgo Waiver), pursuant to the terms of (i) the Ginkgo promissory note dated October 20, 2017, issued by the Company to Ginkgo (as amended, the Ginkgo Note), (ii) the Ginkgo Partnership Agreement, dated October 20, 2017, by and between the Company and Ginkgo, and (iii) the Waiver Agreement and Amendment to Ginkgo Note, dated September 29, 2019, by and between the Company and Ginkgo, pursuant to which Ginkgo agreed to (a) waive the Company's failure to pay past due interest and partnership payments, including interest thereon of $6.7 million by December 15, 2019, and to comply with a reporting covenant prior to March 31, 2020, (b) to make a prior waiver fee payment of $0.5 million on December 15, 2019, (c) waive any cross defaults due to events of default under other debt obligations by the Company, (d) amend payments on the Ginkgo Partnership Agreement beginning on March 31, 2020 to a monthly payment of $0.5 million through and including October 31, 2021, and (e) to defer all past due payments totaling $7.2 million until April 30, 2020. The Ginkgo Waiver was accounted for as a debt modification, as the before and after cash flows were not significantly different.

On May 6, 2020, the Company entered into a waiver agreement under which the maturity date for all past due amounts to Ginkgo was extended to the earlier of the day the Company receives cash proceeds from any private placement of its equity and/or equity-linked securities, and May 31, 2020. The Company paid all past-due amounts to Ginkgo.

On August 10, 2020, the Company and Ginkgo entered into a Second Amendment to Promissory Note and Partnership Agreement (Second Amendment) to, among other things, (i) with respect to the Promissory Note, amend the interest payment frequency from monthly to quarterly beginning September 30, 2020 and reduce the interest rate from 12% to 9% beginning January 1, 2021, conditioned to the timely payment of interest on September 30, 2020 and December 31, 2020; and (ii) with respect to the Partnership Agreement, reduce the partnership payments frequency from monthly to quarterly, in an aggregate amount of $2.1 million, and to defer an aggregate of $9.8 million in partnership payments to the end of the agreement in October 2022 (the "End of Term Payment"), provided that, if the Promissory Note is not fully repaid by April 19, 2022, the End of Term Payment shall be of $10.4 million.

As a result of changes to key provisions of both the Promissory Note and Partnership Agreement, the Company analyzed the before and after cash flows resulting from (i) a reduced interest rate of the Promissory Note, (ii) reduced payment frequency for the Promissory Note interest and Partnership Agreement payments and (iii) changes in the periodic and total payment amounts under the Partnership Agreement, in order to determine whether these changes result in a modification or extinguishment of the obligations under the Second Amendment. Based on the combined before and after cash flows of the Promissory Note and Partnership Agreement, the change was significantly different. Consequently, the modifications resulting from the Second Amendment were accounted for as a debt extinguishment and a new debt issuance. The Company recorded a $2.5 million loss upon extinguishment of the Promissory Note and a $0.1 million loss upon extinguishment of the partnership payments, which was primarily related to the unamortized debt discounts. The $12.0 million principal amount due under the Promissory Note was unchanged and reflects the present value of the obligation after the modifications. See Note 2, "Balance Sheet Details", for more information on the payments due under the Partnership Agreement.

Nikko Loan Agreements and Notes

The loans payable to Nikko Chemicals Co., Ltd. at December 31, 2020 are comprised of the following (amounts in thousands):

Description	Date Issued	Original Loan Amount	Balance at December 31, 2020	Interest Rate per Annum	Maturity Date
Nikko $3.9M Note	December 19, 2016	$3,900	$2,653	5.00%	December 1, 2029
Nikko $200K Capex Loan	February 1, 2019	200	150	5.00%	January 1, 2026
		$4,100	$2,803		

Nikko Loan Agreement

On July 29, 2019, the Company and Nikko entered into a loan agreement (the Nikko Loan Agreement) to make available to the Company secured loans in an aggregate principal amount of $5.0 million, to be issued in separate installments of $3.0 million and $2.0 million, respectively. On July 30, 2019, the Company borrowed the first installment of $3.0 million under the Nikko Loan Agreement and received net cash proceeds of $2.8 million, with the remaining $0.2 million being withheld by Nikko as prepayment of the interest payable on such loan through the maturity date. On August 8, 2019, the Company borrowed the remaining $2.0 million available under the Nikko Loan Agreement and received net cash proceeds of $1.9 million, with the remaining $0.1 million being withheld by Nikko as prepayment of the interest payable on such loan through the maturity date. The loans (i) mature on December 18, 2020, (ii) accrue interest at a rate of 5% per annum from and including the applicable loan date through the maturity date, which interest is required to be prepaid in full on the date of the applicable loan, and (iii) are secured by a first-priority lien on 12.8% of the Aprinnova JV interests owned by the Company. The Company fully repaid the $5.0 million aggregate principal balance in December 2020.

Nikko Secured Loan Agreement Amendment

On December 19, 2019, the Company borrowed $4.5 million from Nikko under a second secured loan agreement. The loan (i) matured on January 31, 2020, (ii) accrues interest at a rate of 2.75% per annum, and (iii) is secured by a first-priority lien on 27.2% of the Aprinnova JV interests owned by the Company. The Company failed to pay the $4.5 million loan on January 31, 2020.

On March 12, 2020, the Company and Nikko Chemicals Co. Ltd. (Nikko), entered into an amendment to the secured loan agreement (Loan Agreement) under which the Company paid Nikko $0.5 million to reduce the

principal balance of the Loan Agreement to $4.0 million, extended the maturity date of the loan from January 31, 2020 to March 31, 2020 and increased the interest rate to 8.0% per annum. The loan (i) matured on March 31, 2020, (ii) accrued interest at a rate of 2.75% per annum, and (iii) was secured by a first-priority lien on 27.2% of the Aprinnova JV interests owned by the Company. The Loan Agreement was accounted for as a debt modification, as the before and after cash flows were not significantly different.

On April 3, 2020, the Company entered into a second amendment to the Loan Agreement under which the maturity date of the loan was extended to April 30, 2020. Subsequently, on May 7, 2020, the Company entered into a third amendment to the Loan Agreement under which the maturity date of the loan was extended to May 31, 2020. The Company fully repaid the $4.0 million loan on June 5, 2020.

Nikko Notes

Facility Note: In December 2016, in connection with the Company's formation of its cosmetics joint venture (the Aprinnova JV) with Nikko Chemicals Co., Ltd. (Nikko), Nikko made a loan to the Company in the principal amount of $3.9 million and the Company issued a promissory note (the Nikko Note) to Nikko in an equal principal amount. The proceeds of the Nikko Note were used to satisfy the Company's remaining liabilities related to the Company's purchase of a manufacturing facility in Leland, North Carolina and related assets in December 2016, including liabilities under a promissory note in the principal amount of $3.5 million issued in connection therewith. The Nikko Note (i) accrues interest at 5% per year, (ii) has a term of 13 years, (iii) is payable in equal monthly installments of principal and interest beginning on January 1, 2017 and (iv) is secured by a first-priority lien on 10% of the Aprinnova JV interests owned by the Company. In addition, the Company is required to repay the Nikko Note with any profits distributed to the Company by the Aprinnova JV, beginning with the distributions for the year ended December 31, 2020, until the Nikko Note is fully repaid. The Nikko Note may be prepaid in full or in part at any time without penalty or premium. The Nikko Note contains customary terms and provisions, including certain events of default after which the Nikko Note may become due and payable immediately.

Aprinnova JV Working Capital Notes: In February 2017, in connection with the formation of the Aprinnova JV in December 2016, Nikko made a working capital loan to the Aprinnova JV in the principal amount of $1.5 million (the First Aprinnova Note). The First Aprinnova Note was fully repaid in January 2018. In August 2017, Nikko made a second working capital loan to the Aprinnova JV in the principal amount of $1.5 million (the Second Aprinnova Note). The Second Aprinnova Note was payable in full on August 1, 2019, with interest payable quarterly. Both notes accrue interest at 2.75% per annum. Effective July 31, 2019, the Company repaid $500,000 and agreed with Nikko to extend the term of the Second Aprinnova Note to August 1, 2020. Under the terms of the extension, the Company was required to make four quarterly principal payments of $100,000 each beginning November 1, 2019 through May 1, 2020 and a final payment of $700,000 at August 1, 2020 maturity. The Company fully repaid this working capital note at maturity in August 2020.

Aprinnova JV Palladium Notes: In October, November and December 2019, Nikko advanced Aprinnova JV a total of $1.3 million under three separate promissory notes to purchase a palladium catalyst used in the manufacturing process at the Leland facility. These short-term notes accrue interest at 2.75% per annum and mature between January 10, 2020 and March 31, 2020. As of February 28, 2020, the total $1.3 million of note balances has been fully repaid in cash and are no longer outstanding.

Aprinnova JV CapEx Note: On February 1, 2019, the Aprinnova JV and Nikko agreed to fund Nikko's $0.2 million share of the joint venture's 2018 capital expenditures through an unsecured seven-year promissory note (the 2018 CapEx Note). The 2018 CapEx note (i) requires quarterly principal payments of $7,200 beginning April 1, 2019, (ii) accrues 5% simple interest per annum, and (iii) matures on January 1, 2026.

Letters of Credit

In June 2012, the Company entered into a letter of credit agreement for $1.0 million under which it provided a letter of credit to the landlord for its headquarters in Emeryville, California in order to cover the security deposit on the lease. This letter of credit is secured by a certificate of deposit. Accordingly, the Company has $1.0 million of restricted cash, noncurrent in connection with this arrangement as of December 31, 2020 and 2019.

5. Mezzanine Equity

Mezzanine equity at December 31, 2020 and 2019 is comprised of proceeds from common shares sold on May 10, 2016 to the Bill & Melinda Gates Foundation (the Gates Foundation). On April 8, 2016, the Company entered into a Securities Purchase Agreement with the Gates Foundation, pursuant to which the Company agreed to sell and issue 292,398 shares of its common stock to the Gates Foundation in a private placement at a purchase price per share of $17.10, the average of the daily closing price per share of the Company's common stock on the Nasdaq Stock Market for the twenty consecutive trading days ending on April 7, 2016, for aggregate proceeds to the Company of approximately $5.0 million (the Gates Foundation Investment). The Securities Purchase Agreement includes customary representations, warranties and covenants of the parties.

In connection with the entry into the Securities Purchase Agreement, on April 8, 2016, the Company and the Gates Foundation entered into a Charitable Purposes Letter Agreement, pursuant to which the Company agreed to expend an aggregate amount not less than the amount of the Gates Foundation Investment to develop a yeast strain that produces artemisinic acid and/or amorphadiene at a low cost and to supply such artemisinic acid and amorphadiene to companies qualified to convert artemisinic acid and amorphadiene to artemisinin for inclusion in artemisinin combination therapies used to treat malaria commencing in 2017. The Company is currently conducting the project. If the Company defaults in its obligation to use the proceeds from the Gates Foundation Investment as set forth above or defaults under certain other commitments in the Charitable Purposes Letter Agreement, the Gates Foundation will have the right to request that the Company redeem, or facilitate the purchase by a third party of, the Gates Foundation Investment shares then held by the Gates Foundation at a price per share equal to the greater of (i) the closing price of the Company's common stock on the trading day prior to the redemption or purchase, as applicable, or (ii) an amount equal to $17.10 plus a compounded annual return of 10%. As of December 31, 2020, the Company's remaining research and development obligation under this arrangement was $0.3 million.

6. Stockholders' Deficit

Foris Warrant Exercises for Cash

On January 13, 2020, Foris, an entity affiliated with director John Doerr and which beneficially owns greater than 5% of the Company's outstanding common stock, delivered to the Company an irrevocable notice of cash exercise with respect to a warrant to purchase 4,877,386 shares of the Company's common stock at an exercise price of $2.87 per share, pursuant to a warrant issued by the Company on August 17, 2018. The Company received approximately $14.0 million from Foris in connection with the warrant exercise representing 4,877,386 shares of common stock issued and recorded $14.0 million as additional paid-in capital.

On March 11, 2020, Foris provided to the Company a notice of cash exercise to purchase 5,226,481 shares of the Company's common stock at an exercise price of $2.87 per share, pursuant to the PIPE Rights (discussed in the January 2020 Private Placement section below) issued by the Company on January 31, 2020. On March 12, 2020, the Company received approximately $15.0 million from Foris in connection with the PIPE Rights exercise. The Company and Foris agreed to defer the issuance of the shares until such time as stockholder approval has been obtained to increase the Company's authorized share count. At March 31, 2020, the PIPE Rights exercise

proceeds were recorded as additional paid-in capital as there is no contractual obligation to return the consideration if stockholder approval is not obtained. Stockholder approval was obtained on May 29, 2020 and the 5,226,481 shares of common stock were issued to Foris on June 2, 2020.

January 2020 Warrant Amendments and Exercises, Foris Debt Equitization and Private Placement

As described below in further detail, on January 31, 2020, the Company completed a series of equity transactions that resulted in the Company (i) receiving $28.3 million in cash, (ii) reducing its aggregate debt principal by $60.0 million and accrued interest by approximately $9.9 million, (iii) issuing an aggregate of (A) 25,326,095 shares of common stock as a result of the exercise of outstanding warrants, and (B) 13,989,973 new shares of common stock in private placements, and (iv) issuing rights to purchase an aggregate of 18,649,961 shares of common stock, at an exercise price of $2.87 per share, for an exercise term of 12 months. See Note 4, "Debt," for more information regarding the accounting treatment of the $60.0 million debt reduction.

Warrant Amendments and Exercises by Certain Holders

On January 31, 2020, the Company entered into separate warrant amendment agreements (the Warrant Amendments) with certain holders (the Warrant Holders) of the Company's outstanding warrants to purchase shares of common stock, pursuant to which the exercise price of certain warrants (the Amended Warrants) held by the Warrant Holders totaling 1.2 million shares was reduced to $2.87 per share. In connection with the entry into the Warrant Amendments, on January 31, 2020, the Warrant Holders exercised their Amended Warrants, representing an aggregate of 1,160,929 shares of common stock (the Warrant Amendment Shares), and the Company issued the Warrant Amendment Shares to the Holders along with a right to purchase an aggregate of 1,160,929 shares of Common Stock, at an exercise price of $2.87 per share, for an exercise term of 12 months from the January 31, 2020 issuance (the Rights). The Company received net proceeds of $3.3 million from the exercise of the Amended Warrants and recorded the $3.3 million as additional paid in capital. The Company also measured the before and after fair value of the Amended Warrants using the Black-Scholes-Merton option pricing model and determined there was no incremental value to record related to the purchase price reduction. Further, the Rights warrants met the derivative scope exception and equity classification criteria to be accounted for in equity.

Warrant Amendments and Exercises, Common Stock Purchase and Debt Equitization by Foris – Related Party

On January 31, 2020, the Company and Foris entered into certain warrant amendment agreements (the Foris Warrant Amendments) totaling 10.2 million shares of the Company's outstanding warrants to purchase shares of common stock, pursuant to which the exercise price of these certain warrants (the Amended Foris Warrants) was reduced to $2.87 per share. In connection with the Foris Warrant Amendments, on January 31, 2020 (i) Foris exercised all its then-outstanding common stock purchase warrants, including the Amended Foris Warrants, totaling 19,287,780 shares of common stock, at a weighted average exercise price of approximately $2.84 per share for an aggregate exercise price of $54.8 million (the Exercise Price), and purchased 5,279,171 shares of common stock (the Foris Shares) at $2.87 per share for a total purchase price of $15.1 million (Purchase Price), (ii) Foris paid the Exercise Price and the Purchase Price through the cancellation of $60 million of principal and $9.9 million of accrued interest and fees owed by the Company to Foris under the Foris $19 million Note and the Foris LSA (which was treated as a debt extinguishment as discussed in Note 4, "Debt") and (iii) the Company issued to Foris the Foris Shares and an additional right (the Additional Right) to purchase 8,778,230 shares of Common Stock at a purchase price of $2.87 per share, for a period of 12 months from the execution of the warrant exercise agreement.

Upon exercise of the Amended Foris Warrants and issuance of the Foris Shares, the Company recorded a $69.9 million increase to additional paid-in capital. The Company also measured the before and after fair value of

the Amended Foris Warrants using the Black-Scholes-Merton option pricing model and determined there was no incremental value to record related to the purchase price reduction. Further, the Company concluded the Additional Rights met the derivative scope exception and criteria to be accounted for in equity and recorded the $8.9 million fair value of the Additional Rights to additional paid-in capital and loss upon extinguishment of debt. The fair value was determined using a Black-Scholes-Merton option pricing model based on the following input assumptions: (i) $2.56 stock price, (ii) 112% volatility, (iii) 1.45% risk free rate and (iv) 0% dividend.

January 2020 Private Placement

On January 31, 2020, the Company entered into separate Security Purchase Agreements with certain accredited investors and Foris, for the issuance and sale of an aggregate of 8,710,802 shares of common stock and rights to purchase an aggregate of 8,710,802 shares of common stock (PIPE Rights) at a purchase price of $2.87 per share, for a period of 12 months, for an aggregate purchase price of $25 million. The $25 million in proceeds was recorded as additional paid-in capital. See Note 3, "Fair Value Measurement," for information regarding the valuation methodology used to determine fair value and the related accounting treatment of the PIPE rights.

Principal Conversion into Common Stock and New Warrants Issued in Exchange of Senior Convertible Notes

On January 14, 2020, the Company completed the exchange of the Company's $66 million Senior Convertible Notes (or the Prior Notes), pursuant to separate exchange agreements (the Exchange Agreements) with certain private investors (the Holders), for (i) new senior convertible notes in an aggregate principal amount of $51 million (the New Notes or Senior Convertible Notes), (ii) an aggregate of 2,742,160 shares of common stock (the Exchange Shares), (iii) rights (the Rights) to acquire up to an aggregate of 2,484,321 shares of common stock (the Rights Shares), and (iv) warrants (the Warrants) to purchase up to an aggregate of 3,000,000 shares of common stock (the Warrant Shares) at an exercise price of $3.25 per share, with an exercise term of two years from issuance, The New Notes, Exchange Shares, Rights and Warrants were issued on January 14, 2020. The Rights were exercised by the Holder and the Rights Shares were issued by the Company according to the terms of the Senior Convertible Notes on February 24, 2020. The contractual value of the Exchange Shares and the Rights Shares was $2.87 per share. Upon issuance of the New Notes, Exchange Shares and Rights, the $15.0 million of debt principal was extinguished and the $15.2 million fair value of the Exchange Shares and the Rights Shares was recorded as additional paid in capital. See Note 3, "Fair Value Measurement," for more information regarding the valuation methodology used to determine the fair value and the related accounting treatment of the Warrants, and see Note 4, "Debt," for further information on the accounting treatment and the terms of the note exchange.

Release of Pre-Delivery Shares and Amendment to Warrants Issued to Holders of Senior Convertible Notes

Under the terms of the November 15, 2019 Senior Convertible Notes and the January 14, 2020 Senior Convertible Notes, the Company was required to pre-deliver 7.5 million shares of common stock (the Pre-Delivery Shares) to the Holders, which are freely tradeable, validly issued, fully paid, nonassessable and free from all preemptive or similar rights or liens, for the Holders to sell, trade or hold, subject to certain limitations, for as long as the Senior Convertible Notes are outstanding. However, the Company may elect or be required to apply the value of the pre-delivered shares to satisfy periodic principal and interest payments or other repayment events. Within ten business days following redemption or repayment of in full the Senior Convertible Notes and the satisfaction or discharge by the Company of all outstanding Company obligations under the Senior Convertible Notes, the Holders shall deliver 7.5 million shares of the Company's common stock to the Company, less any shares used to satisfy any accrued interest or principal amortization payments under such notes. The Company concluded the Pre-Delivery Shares provision meets the criteria of freestanding instrument that is legally detachable and separately exercisable from the Senior Convertible Notes and should be classified in equity as the common shares issued are both indexed to the Company's own stock and meet the equity classification criteria. As such, the Company accounted for the fair value of the Pre-Delivery Shares within equity.

On May 1, 2020, in connection with the amendment to the Senior Convertible Notes described in Note 4, "Debt", the Company and the Holders of the Senior Convertible Notes agreed, among other provisions described in Note 4, "Debt": (i) to remove all equity triggering provisions that allowed the Holders to convert the notes at a reduced conversion price in certain circumstances; (ii) to reduce the conversion price of the New Notes from $5.00 to $3.50; (iii) to release to the Holders an aggregate of 2,836,364 shares of common stock originally required to be returned under the Pre-Delivery Share arrangement, and (iv) return an aggregate of 1,363,636 Pre-Delivery Shares held by certain Holders to the Company. Further, on June 4, 2020, the Company agreed to release an additional 700,000 Pre-Delivery Shares to one of the Holders, in connection with the second amendment to the Senior Convertible Notes described in Note 4, "Debt". After the release and return of the Pre-Delivery Shares on May 1, 2020 and June 4, 2020, the total number of Pre-Delivery Shares subject to the arrangement is 2,600,000 and must be returned to the Company following full redemption or repayment of the Senior Convertible Notes. As a result of releasing the 3,536,364 Pre-Delivery Shares to the Holders, the Company recorded $10.5 million of additional interest expense, representing the fair value of the released share.

Further, in connection with the May 1, 2020 amendment to the Senior Convertible Notes the Company and the Holders entered into certain warrant amendment agreements pursuant to which (i) the exercise price of the warrants issued on January 14, 2020 in connection with the Exchange of the Senior Convertible Notes was reduced to $2.87 per share (from $3.25) with respect to an aggregate of 2,000,000 warrant shares; (ii) the exercise price of a warrant to purchase 960,225 shares of the Company's common stock issued to one of the Holders on May 10, 2019 was reduced to $2.87 per share (from $5.02), and the exercise term of such warrant was extended to January 31, 2022 (from May 10, 2021); and (iii) the exercise term of a right to purchase 431,378 shares of the Company's common stock issued to one of the Holders on January 31, 2020 was extended to January 31, 2022 (from January 31, 2021). Each of these warrant instruments were previously accounted for in equity. As a result of the warrant amendments, the Company performed a before and after remeasurement of the warrants using the Black-Scholes-Merton option pricing model and recorded $1.1 million of incremental interest expense and a corresponding increase to additional paid in capital.

Total Conversion Price Reduction and Subsequent Conversion into Common Stock

On April 6, 2020, the Company and Total entered into a Senior Convertible Note Maturity Extension Agreement to extend the maturity date of the 2014 Rule 144A Convertible Note to April 30, 2020 and reduce the conversion price of the 2014 Rule 144A Convertible Note from $56.16 to $2.87 per share. See Note 4, "Debt" for further information related to this debt instrument. On June 2, 2020, Total elected to convert all the outstanding principal and interest totaling $9.3 million due under the 2014 Rule 144A Convertible Note into 3,246,489 shares of common stock. Upon conversion, the $9.3 million debt principal and interest balance and the $6.5 million derivative liability balance related to the conversion option was derecognized into additional paid-in capital. See Note 3, "Fair Value Measurement," for more information regarding the accounting treatment of the embedded conversion option and subsequent conversion price reduction.

Increase in Authorized Common Stock

On May 29, 2020, through a proxy vote at the Company's Annual Stockholder meeting, the Company's stockholders approved an increase in the Company's authorized common stock share count from 250 million to 350 million.

June 2020 PIPE

On June 1, 2020 and June 4, 2020, the Company entered into separate security purchase agreements (Purchase Agreements) with certain accredited investors (Investors), including Foris and Vivo Capital LLC, stockholders that beneficially own more than 5% of the Company's outstanding common stock and are, respectively, owned by or

affiliated with individuals serving on the Company's Board of Directors, for the issuance and sale of an aggregate of 32,614,573 shares of the Company's common stock, $0.0001 par value per share and 102,156 shares of the Company's Series E Convertible Preferred Stock, $0.0001 par value per share, convertible into 34,052,070 shares of common stock, at a price of $3.00 per common share and $1,000 per preferred share, resulting in an aggregate purchase price of $200 million (Offering). The transaction closed on June 5, 2020, following the satisfaction of customary closing conditions. Upon closing, the Company received aggregate net proceeds of approximately $190 million after payment of the Offering expenses and placement agent fees. The Company used the proceeds from the Offering for the repayment of certain outstanding indebtedness and the remainder for general corporate purposes.

The Purchase Agreements included customary representations, warranties and covenants of the parties. In addition, the Company executed a letter agreement pursuant to which, subject to certain exceptions, the Company, the members of the Company's Board of Directors, and the Company's named executive officers agreed not to issue, enter into any agreement to issue or announce the issuance or proposed issuance of any shares of Common Stock or securities convertible into or exercisable or exchangeable for common stock until September 2, 2020. The securities issued pursuant to the Purchase Agreements were sold in private placements pursuant to an exemption from registration under Section 4(a)(2) of the Securities Act of 1933, as amended (Securities Act) and Rule 506(b) of Regulation D promulgated under the Securities Act, without general solicitation, made only to and with accredited investors as defined in Regulation D.

Series E Convertible Preferred Stock and Amendment to Articles of Incorporation or Bylaws

On June 5, 2020, the Company filed the Certificate of Designation of Preferences, Rights and Limitations of Series E Convertible Preferred Stock (Preferred Stock) with the Secretary of State of Delaware. Each share of Series E Preferred Stock issued in the June 2020 PIPE had a stated value of $1,000 and was convertible into 333.33 shares of common stock. All preferred shares automatically converted into common stock without any action by the holders on the first trading day after the Company obtains stockholder approval (as described below). Unless and until converted into common stock in accordance with its terms, the Preferred Stock had no voting rights, other than as required by law or with respect to matters specifically affecting the Preferred Stock.

The Company agreed to obtain stockholder approval for the issuance of common stock upon conversion of the Preferred Stock as is required by the applicable rules and regulations of the Nasdaq Stock Market, including Nasdaq Listing Standard Rule 5635(d), and including the issuance of common stock upon conversion of the Preferred Shares in excess of 19.99% of the issued and outstanding common stock on the date of the Purchase Agreements. Pursuant to the Purchase Agreements, the Company was required to hold a special meeting of stockholders within 75 calendar days of the date of the Purchase Agreements for the purpose of obtaining stockholder approval. This special meeting of stockholders was held on August 14, 2020, at which the Company's stockholders approved the conversion of the Series E Preferred Stock and as a result, 34,052,084 shares of common stock were issued on August 17, 2020 in exchange for the 102,156 shares of the Company's Series E Convertible Preferred Stock.

The Company analyzed the automatic conversion provision related to the Series E Preferred Stock at the original commitment dates and determined the holders received a contingent beneficial conversion feature (BCF) equal to $67.2 million. This amount represents the difference between the Company's closing stock price at the June 1, 2020 and June 4, 2020 commitment dates ($5.35 and $4.88, respectively) and the $3.00 conversion price. As the automatic conversion provision was contingent on stockholder approval on August 14, 2020, the BCF would be recognized when the contingency was resolved. Upon obtaining stockholder approval, the $67.2 million BCF was recognized in additional paid-in capital and reflected as a deemed dividend to the preferred stockholders in the December 31, 2020 consolidated statement of operations, increasing the net loss attributable to common stockholders and increasing basic net loss per share.

Shares Issuable under Convertible Notes and Convertible Preferred Stock

In connection with various debt transactions (see Note 4, "Debt"), the Company issued certain convertible notes and preferred shares that are convertible into shares of common stock as follows as of December 31, 2020, at any time at the election of each debtholder:

	Number of Shares Instrument Is Convertible into as of December 31, 2020
Senior convertible notes	8,574,399
Foris convertible note	16,680,334
Series D preferred stock (8,280 shares outstanding at December 31, 2020)	1,943,661
	27,198,394

Warrants

The Company issues warrants in certain debt and equity transactions in order to facilitate raising equity capital or reduce borrowing costs. In connection with various debt and equity transactions (see Note 4, "Debt" and below), the Company has issued warrants exercisable for shares of common stock. The following table summarizes warrant activity for the year ended December 31, 2020:

Transaction	Year Issued	Expiration Date	Number Outstanding as of December 31, 2019	Additional Warrants Issued	Exercises	Expired	Exercise Price per Share of Warrants Exercised	Number Outstanding as of December 31, 2020	Exercise Price per Share as of December 31, 2020
High Trail/Silverback warrants	2020	January 14, 2022 and July 10, 2022	—	3,000,000	—	—	$ —	3,000,000	$2.87/$3.25
2020 PIPE right shares	2020	February 4, 2021	—	8,710,802	(5,226,481)	—	$2.87	3,484,321	$ 2.87
January 2020 warrant exercise right shares	2020	January 31, 2021, July 31, 2021 and January 31, 2022	—	9,939,159	(5,000,000)	—	$ —	4,939,159	$ 2.87
Foris LSA warrants	2019	August 14, 2021	3,438,829	—	(3,438,829)	—	$2.87	—	$ —
November 2019 Foris warrant	2019	November 27, 2021	1,000,000	—	(1,000,000)	—	$2.87	—	$ —
August 2019 Foris warrant	2019	August 28, 2021	4,871,795	—	(4,871,795)	—	$2.87	—	$ —
April 2019 PIPE warrants	2019	April 26, 2021, April 29, 2021 and May 3, 2021	8,084,770	—	(4,712,781)	—	$2.87	3,371,989	$4.76/$5.02
April 2019 Foris warrant	2019	April 16, 2021	5,424,804	—	(5,424,804)	—	$2.87	—	$ —
September and November 2019 Investor Credit Agreement warrants	2019	September 10, 2021 and November 14, 2021	5,233,551	—	(50,000)	—	$ —	5,183,551	$ 2.87
Naxyris LSA warrants	2019	August 14, 2021	2,000,000	—	—	—	$ —	2,000,000	$ 2.87

Transaction	Year Issued	Expiration Date	Number Outstanding as of December 31, 2019	Additional Warrants Issued	Exercises	Expired	Exercise Price per Share of Warrants Exercised	Number Outstanding as of December 31, 2020	Exercise Price per Share as of December 31, 2020
October 2019 Naxyris warrant	2019	October 28, 2021	2,000,000	—	—	—	$ —	2,000,000	$ 3.87
May-June 2019 6% Note Exchange warrants	2019	May 15, 2021 and June 24, 2021	2,181,818	—	—	—	$ —	2,181,818	$2.87/$5.12
May 2019 6.50% Note Exchange warrants	2019	May 14, 2021 and January 31, 2022	1,744,241	—	(784,016)	—	$2.87	960,225	$ 2.87
July 2019 Wolverine warrant	2019	July 8, 2021	1,080,000	—	—	—	$ —	1,080,000	$ 2.87
August 2018 warrant exercise agreements	2018	May 17, 2020 and May 20, 2020	12,097,164	—	(4,877,386)	(7,219,778)	$2.87	—	$ —
May 2017 cash warrants	2017	July 10, 2022	6,078,156	—	—	—	$ —	6,078,156	$ 2.87
August 2017 cash warrants	2017	August 7, 2022	3,968,116	—	—	—	$ —	3,968,116	$ 2.87
May 2017 dilution warrants	2017	July 10, 2022	3,085,893	—	—	—	$ —	3,085,893	$ 0.00
August 2017 dilution warrants	2017	May 23, 2023	3,028,983	—	—	—	$ —	3,028,983	$ 0.00
February 2016 related party private placement	2016	February 12, 2021	171,429	—	(152,381)	—	$0.15	19,048	$ 0.15
July 2015 related party debt exchange	2015	July 29, 2020 and July 29, 2025	133,334	—	(133,334)	—	$0.15	—	$ —
July 2015 private placement	2015	July 29, 2020	72,650	—	(72,650)	—	$0.15	—	$ —
July 2015 related party debt exchange	2015	July 29, 2025	58,690	—	—	—	$ —	58,690	$ 0.15
Other	2011	December 23, 2021	1,406	—	—	—	$ —	1,406	$ 160.05
			65,755,629	21,649,961	(35,744,457)	(7,219,778)		44,441,355	

For information regarding warrants issued or exercised subsequent to December 31, 2020, see Note 15, "Subsequent Events".

Right of First Investment to Certain Investors

In connection with investments in the Company has granted certain investors, including Vivo and DSM, a right of first investment if the Company proposes to sell securities in certain financing transactions. With these rights, such investors may subscribe for a portion of any such new financing and require the Company to comply with certain notice periods, which could discourage other investors from participating in, or cause delays in its ability to close, such a financing.

7. Consolidated Variable-interest Entities and Unconsolidated Investments

Consolidated Variable-interest Entity

Aprinnova, LLC (Aprinnova JV) — Related Party

In December 2016, the Company, Nikko Chemicals Co., Ltd. an existing commercial partner of the Company, and Nippon Surfactant Industries Co., Ltd., an affiliate of Nikko (collectively, Nikko) entered into a joint venture (the Aprinnova JV Agreement) pursuant to which the Company contributed certain assets, including certain intellectual property and other commercial assets relating to its business-to-business cosmetic ingredients business (the Aprinnova JV Business), as well as its Leland production facility. The Company also agreed to provide the Aprinnova JV with exclusive (to the extent not already granted to a third party), royalty-free licenses to certain of the Company's intellectual property necessary to make and sell products associated with the Aprinnova JV Business (the Aprinnova JV Products). Nikko purchased their 50% interest in the Aprinnova JV in exchange for the following payments to the Company: (i) an initial payment of $10.0 million and (ii) the profits, if any, distributed to Nikko in cash as members of the Aprinnova JV during the three-year period from 2017 to 2019, up to a maximum of $10.0 million. Under the Aprinnova JV Agreement, in the event of a merger, acquisition, sale or other similar reorganization, or a bankruptcy, dissolution, insolvency or other similar event, of the Company, on the one hand, or Nikko, on the other hand, the other member will have a right of first purchase with respect to such member's interest in the Aprinnova JV, at the fair market value of such interest, in the case of a merger, acquisition, sale or other similar reorganization, and at the lower of the fair market value or book value of such interest, in the case of a bankruptcy, dissolution, insolvency or other similar event.

The Aprinnova JV operates in accordance with the Aprinnova Operating Agreement under which the Aprinnova JV is managed by a Board of Directors consisting of four directors: two appointed by the Company and two appointed by Nikko. In addition, Nikko has the right to designate the Chief Executive Officer of the Aprinnova JV from among the directors and the Company has the right to designate the Chief Financial Officer. The Company determined that it has the power to direct the activities of the Aprinnova JV that most significantly impact its economic performance because of its (i) significant control and ongoing involvement in operational decision making, (ii) guarantee of production costs for certain Aprinnova JV products, as discussed below, and (iii) control over key supply agreements, operational and administrative personnel and other production inputs. The Company has concluded that the Aprinnova JV is a variable-interest entity (VIE) under the provisions of ASC 810, Consolidation, and that the Company has a controlling financial interest and is the VIE's primary beneficiary. As a result, the Company accounts for its investment in the Aprinnova JV on a consolidation basis in accordance with ASC 810.

Under the Aprinnova Operating Agreement, profits from the operations of the Aprinnova JV, if any, are distributed as follows: (i) first, to the Company and Nikko (the Members) in proportion to their respective unreturned capital contribution balances, until each Member's unreturned capital contribution balance equals zero and (ii) second, to the Members in proportion to their respective interests. Any future capital contributions will be made by the Company and Nikko on an equal (50%/50%) basis each time, unless otherwise mutually agreed. For the year ended December 31, 2019, a $0.3 million distribution was made to Nikko and was recorded as a decrease in noncontrolling interest. In addition, the Company agreed to guarantee a maximum production cost for squalane and hemisqualane to be produced by the Aprinnova JV and to bear any cost of production above such guaranteed costs.

In connection with the contribution of the Leland Facility by the Company to the Aprinnova JV, at the closing of the formation of the Aprinnova JV, Nikko made a loan to the Company in the principal amount of $3.9 million, and the Company in consideration therefore issued a promissory note to Nikko in an equal principal amount, as described in more detail in Note 4, "Debt" under "Nikko Note." Also, pursuant to the Aprinnova JV Agreement, the Company and Nikko agreed to make initial working capital loans to the Aprinnova JV in the amounts of $0.5 million and $1.5 million, respectively, and again in 2019 with additional loans of $0.2 million each, and in 2019 Nikko provided the Aprinnova JV with $1.2 million of short-term loans to purchase certain manufacturing supplies. These loans are described in more detail in Note 4, "Debt".

The following presents the carrying amounts of the Aprinnova JV's assets and liabilities included in the accompanying consolidated balance sheets. Assets presented below are restricted for settlement of the Aprinnova JV's obligations and all liabilities presented below can only be settled using the Aprinnova JV resources.

December 31, (In thousands)	2020	2019
Assets	$24,114	$17,390
Liabilities	$ 1,490	$ 3,690

The Aprinnova JV's assets and liabilities are primarily comprised of inventory, property, plant and equipment, accounts payable and debt, which are classified in the same categories in the Company's consolidated balance sheets.

The change in noncontrolling interest for the Aprinnova JV for the years ended December 31, 2020 and 2019 is as follows:

Year Ended December 31, (In thousands)	2020	2019
Balance at beginning of year	$ 609	$ 937
Income (loss) attributable to noncontrolling interest	4,710	(328)
Balance at end of year	$5,319	$ 609

Clean Beauty Collaborative, Inc. — Related Party

In October 2020, the Company through its 100% owned subsidiary, Amyris Clean Beauty, Inc. entered into an agreement with Rosie Huntington-Whiteley, (RHW), model turned businesswoman and founder of beauty knowledge and commerce destination, RoseInc.com, for the commercialization of clean sustainable cosmetics under the Amyris umbrella using the creative design capabilities of RHW.

Clean Beauty Collaborative, Inc. was formed as a Delaware Corporation. Amyris Clean Beauty, Inc. has the right to designate three Board of Directors and owns 60% of the issued and outstanding common shares and RHW has the right to designate two Board of Directors and owns 40% of the issued and outstanding common shares. The Company concluded the newly formed legal entity was a VIE due to insufficient equity at-risk and that the Company was the primary beneficiary through its controlling financial interest. Therefore, the Company will consolidate the business activities of the new venture.

At the formation date, RHW assigned all rights and title to the Roseinc.com internet domain name and the ROSE INC. trademark to Clean Beauty Collaborative, Inc., however, no financial assets were contributed by either party. Amyris Clean Beauty, Inc. is committed to the initial funding and commercial launch of the new product line to the general public, which is anticipated for later in 2021. As of December 31, 2020, the newly formed company did not have any substantive assets or liabilities, but incurred a $1.3 million loss related business formation and launch activities during the fourth quarter of 2020, of which $0.5 million is attributable to RHW's noncontrolling interest and reflected in Income (loss) attributable to noncontrolling interest in the consolidated statement of operations for the year ended December 31, 2020.

Unconsolidated Investments

Equity-method Investments

Novvi LLC (Novvi)

Novvi is a U.S.-based joint venture among the Company, American Refining Group, Inc., Chevron U.S.A. Inc. and H&R Group US, Inc. Novvi's purpose is to develop, produce and commercialize base oils, additives and lubricants derived from Biofene for use in the automotive, commercial and industrial lubricants markets.

As of December 31, 2020, each of the investors held equity ownership in Novvi as follows:

Amyris, Inc.	18.4%
American Refining Group, Inc.	8.8%
Chevron U.S.A., Inc.	61.2%
H&R Group US, Inc.	11.6%
	100.0%

The Company accounts for its investment in Novvi under the equity method of accounting, having determined that (i) Novvi is a VIE, (ii) the Company is not Novvi's primary beneficiary, and (iii) the Company has the ability to exert significant influence over Novvi. Under the equity method, the Company's share of profits and losses and impairment charges on investments in affiliates are included in "Loss from investments in affiliates" in the consolidated statements of operations. In accordance with equity-method accounting, the Company records its share of Novvi's earnings or losses for each accounting period and adjusts the investment balance accordingly. However, the Company is not obligated to fund Novvi's potential future losses, so the Company will not record equity-method losses that would result in the investment in Novvi falling to below zero and becoming a liability. As of December 31, 2020 and 2019, the carrying amount of the Company's equity investment in Novvi was $2.4 million and $4.7 million, respectively.

8. Net Loss per Share Attributable to Common Stockholders

The Company computes net loss per share in accordance with ASC 260, "Earnings per Share." Basic net loss per share of common stock is computed by dividing the Company's net loss attributable to Amyris, Inc. common stockholders by the weighted-average number of shares of common stock outstanding during the period. Diluted net loss per share of common stock is computed by giving effect to all potentially dilutive securities, including stock options, restricted stock units, convertible preferred stock, convertible promissory notes and common stock warrants, using the treasury stock method or the as converted method, as applicable. For the year ended December 31, 2020, basic net loss per share was the same as diluted net loss per share because the inclusion of all potentially dilutive securities outstanding was anti-dilutive. As such, the numerator and the denominator used in computing both basic and diluted net loss were the same for those years.

The Company follows the two-class method when computing net loss per common share when shares are issued that meet the definition of participating securities. The two-class method requires income available to common stockholders for the period to be allocated between common stock and participating securities based upon their respective rights to receive dividends as if all income for the period had been distributed. The two-class method also requires losses for the period to be allocated between common stock and participating securities based on their respective rights if the participating security contractually participates in losses. The Company's convertible preferred stock are participating securities as they contractually entitle the holders of such shares to participate in dividends and contractually require the holders of such shares to participate in the Company's losses.

The following table presents the calculation of basic and diluted net loss per share of common stock attributable to Amyris, Inc. common stockholders:

Years Ended December 31, (In thousands, except shares and per share amounts)	2020	2019
Numerator:		
Net loss attributable to Amyris, Inc.	$ (331,039)	$ (242,767)
Less: deemed dividend to preferred stockholders upon conversion of Series E preferred stock	(67,151)	—
Less: deemed dividend to preferred stockholder on issuance and modification of common stock warrants	—	(34,964)
Add: loss allocated to participating securities	15,879	7,380
Net loss attributable to Amyris, Inc. common stockholders, basic	(382,311)	(270,351)
Adjustment to loss allocated to participating securities	—	137
Gain from change in fair value of derivative instruments	—	(4,963)
Net loss attributable to Amyris, Inc. common stockholders, diluted	$ (382,311)	$ (275,177)
Denominator:		
Weighted-average shares of common stock outstanding used in computing net loss per share of common stock, basic	203,598,673	101,370,632
Basic loss per share	$ (1.88)	$ (2.67)
Weighted-average shares of common stock outstanding	203,598,673	101,370,632
Effect of dilutive common stock warrants	—	(74,057)
Weighted-average common stock equivalents used in computing net loss per share of common stock, diluted	203,598,673	101,296,575
Diluted loss per share	$ (1.88)	$ (2.72)

The following outstanding shares of potentially dilutive securities were excluded from the computation of diluted net loss per share of common stock for the periods presented because including them would have been anti-dilutive:

Years Ended December 31,	2020	2019
Period-end common stock warrants	38,248,741	59,204,650
Convertible promissory notes[(1)]	22,061,759	13,381,238
Period-end stock options to purchase common stock	6,502,096	5,620,419
Period-end restricted stock units	7,043,909	5,782,651
Period-end preferred shares on an as-converted basis	1,943,661	1,943,661
Total potentially dilutive securities excluded from computation of diluted net loss per share	75,800,166	85,932,619

[(1)] The potentially dilutive effect of convertible promissory notes was computed based on conversion ratios in effect as of the respective period end dates. A portion of the convertible promissory notes issued carries a provision for a reduction in conversion price under certain circumstances, which could potentially increase the dilutive shares outstanding. Another portion of the convertible promissory notes issued carries a provision for an increase in the conversion rate under certain circumstances, which could also potentially increase the dilutive shares outstanding.

9. Commitments and Contingencies

Guarantor Arrangements

The Company has agreements whereby it indemnifies its executive officers and directors for certain events or occurrences while the executive officer or director is serving in his or her official capacity. The indemnification period remains enforceable for the executive officer's or director's lifetime. The maximum potential amount of future payments the Company could be required to make under these indemnification agreements is unlimited; however, the Company has a director and officer insurance policy that limits its exposure and enables the Company to recover a portion of any future payments. As a result of its insurance policy coverage, the Company believes the estimated fair value of these indemnification agreements is minimal. Accordingly, the Company had no liabilities recorded for these agreements as of December 31, 2020 and 2019.

The Foris Convertible Note (see Note 4, "Debt") is collateralized by first-priority liens on substantially all of the Company's assets, including Company intellectual property, other than certain Company intellectual property licensed to DSM and the Company's shares of Aprinnova. Certain of the Company's subsidiaries have guaranteed the Company's obligations under the Foris Convertible Note.

The obligations of the Company under the Naxyris Note (see Note 4, "Debt") are (i) guaranteed by the Subsidiary Guarantors and (ii) secured by a perfected security interest in substantially all of the assets of the Company and the Subsidiary Guarantors (the Collateral), junior in payment priority to Foris subject to certain limitations and exceptions, as well as the terms of the Intercreditor Agreement.

The Nikko $3.9 million note is collateralized by a first-priority lien on 10.0% of the Aprinnova JV interests owned by the Company.

The promissory notes issued under the 2019 DSM Credit Agreement (see Note 4, "Debt") are secured by a first-priority lien on certain Company intellectual property licensed to DSM.

The obligations of the Company under the Schottenfeld Notes (see Note 4, "Debt") are secured by a perfected security interest in substantially all of the assets of the Company and the Subsidiary Guarantors, junior in payment priority to Foris and Naxyris subject to the Subordination Agreement among Foris, Naxyris and the Schottenfeld Lenders.

Other Matters

Certain conditions may exist as of the date the financial statements are issued, which may result in a loss to the Company but will only be recorded when one or more future events occur or fail to occur. The Company's management assesses such contingent liabilities, and such assessment inherently involves an exercise of judgement. In assessing loss contingencies related to legal proceedings that are pending against and by the Company or unasserted claims that may result in such proceedings, the Company's management evaluates the perceived merits of any legal proceedings or unasserted claims as well as the perceived merits of the amount of relief sought or expected to be sought.

If the assessment of a contingency indicates that it is probable that a material loss has been incurred and the amount of the liability can be estimated, then the estimated liability would be accrued in the Company's financial statements. If the assessment indicates that a potential material loss contingency is not probable but is reasonably possible, or is probable but cannot be reasonably estimated, then the nature of the contingent liability, together with an estimate of the range of possible loss if determinable and material would be disclosed. Loss contingencies considered to be remote by management are generally not disclosed unless they involve guarantees, in which case the guarantee would be disclosed.

On April 3, 2019, a securities class action complaint was filed against Amyris and our CEO, John G. Melo, and former CFO (and current Chief Business Officer), Kathleen Valiasek, in the U.S. District Court for the Northern District of California. The complaint seeks unspecified damages on behalf of a purported class that would comprise all persons and entities that purchased or otherwise acquired our securities between March 15, 2018 and March 19, 2019. The complaint, which was amended by the lead plaintiff on September 13, 2019, alleges securities law violations based on statements and omissions made by the Company during such period. On October 25, 2019, the defendants filed a motion to dismiss the securities class action complaint, which was denied by the court on October 5, 2020. The Company filed its answer to the securities class action complaint on October 26, 2020. Subsequent to the filing of the securities class action complaint described above, on June 21, 2019 and October 1, 2019, respectively, two separate purported shareholder derivative complaints were filed in the U.S. District Court for the Northern District of California (Bonner v. Doerr, et al., and Carlson v. Doerr, et al.) based on similar allegations to those made in the securities class action complaint described above and naming the Company, and certain of the Company's current and former officers and directors, as defendants. The derivative lawsuits sought to recover, on the Company's behalf, unspecified damages purportedly sustained by the Company in connection with allegedly misleading statements and omissions made in connection with the Company's securities filings. The derivative lawsuits were dismissed on October 18, 2019 (Bonner) and December 10, 2019 (Carlson), without prejudice. On November 3, 2020, Bonner re-filed its derivative complaint against the Company in San Mateo County Superior Court. The Company filed its demurrer to the complaint on January 13, 2021; and the hearing is scheduled for April 22, 2021. An additional shareholder derivative complaint (Kimbrough v. Melo, et al.), substantially identical to the Bonner complaint, was filed on December 18, 2020 in the United States District Court for the Northern District of California. On February 19, 2021, the Company filed its motion to dismiss the Kimbrough complaint. The Company believes the securities class action complaint, and the derivative complaints, lack merit, and intends to continue to defend itself vigorously. Given the early stage of these proceedings, it is not yet possible to reliably determine any potential liability that could result from these matters.

On July 24, 2020, a securities class action complaint was filed against Amyris and the members of the Board in the Court of Chancery of the State of Delaware (Flatischler v. Melo, et. al.). The complaint alleged a breach of fiduciary obligation to disclose material information to stockholders in the proxy statement filed with the Securities and Exchange Commission on July 6, 2020 (Proxy), with respect to the Company's special stockholders' meeting held on August 14, 2020 (Special Meeting), at which stockholders were to vote to approve the conversion of all outstanding indebtedness under the Foris Convertible Note and of the Series E Preferred Stock held by Foris issued in the Company's June 2020 PIPE into shares of common stock, in accordance with Nasdaq Listing Standard Rule 5635(d). See Note 4, "Debt," "Amendment No. 1 to Foris LSA — Foris, Related Party," and Note 6, "Stockholders' Deficit," "June 2020 PIPE," and "Series E Convertible Preferred Stock and Amendment to Articles of Incorporation or Bylaws" in Part II, Item 8 of this Annual Report on Form 10-K for more information. The plaintiffs sought to enjoin the Special Meeting. On August 6, 2020, the plaintiffs withdrew their complaint as moot following the Company's filing of a supplement to the Proxy on August 5, 2020. The Proxy supplement provided additional information regarding the approval process of the Foris transactions outlined above and the June 2020 PIPE, and the relationships between the Company and its financial advisors to the June 2020 PIPE. Without admitting that the allegations in the complaint had any merit, the Company decided it was in its and the stockholders' best interests to agree to pay $125,000 to plaintiff's counsel in full satisfaction of its claim for attorneys' fees and expenses incurred by filing the complaint. Three substantially similar complaints were filed: on July 28, 2020, in the United States District Court of Delaware (Sabatini v. Amyris, Inc.); on July 31, 2020, in the Northern District of California (Nair v. Amyris); and on August 4, 2020, in the Southern District of New York (Chamorro v. Amyris). Amyris answered the Chamorro case on October 19, 2020. The plaintiffs in the Sabatini and Nair cases voluntarily dismissed their complaints on October 8, and October 22, 2020, respectively, and the plaintiff for the Chamorro case agreed to dismiss without prejudice upon a nominal payment by the Company.

On September 10, 2020, LAVVAN, Inc. (Lavvan) filed a suit against the Company in the United States District Court for the Southern District of New York alleging breach of contract, patent infringement, and trade secret

misappropriation in connection with that certain Research, Collaboration and License Agreement between Lavvan and Amyris, dated March 18, 2019, as amended (Cannabinoid Agreement). Amyris filed motions to compel arbitration or to dismiss on October 2, 2020. On October 30, Lavvan filed its opposition to the motions and the Company filed its reply to such opposition on November 13, 2020. The Company believes the suit lacks merit and intends to continue to defend itself vigorously. Given the early stage of these proceedings, it is not yet possible to reliably determine any potential liability that could result therefrom.

The Company is subject to disputes and claims that arise or have arisen in the ordinary course of business and that have not resulted in legal proceedings or have not been fully adjudicated. Such matters that may arise in the ordinary course of business are subject to many uncertainties and outcomes are not predictable with reasonable assurance and therefore an estimate of all the reasonably possible losses cannot be determined at this time. Therefore, if one or more of these legal disputes or claims resulted in settlements or legal proceedings that were resolved against the Company for amounts in excess of management's expectations, the Company's consolidated financial statements for the relevant reporting period could be materially adversely affected.

10. Revenue Recognition

Disaggregation of Revenue

The following tables present revenue by primary geographical market, based on the location of the customer, as well as by major product and service:

Years Ended December 31, (In thousands)	2020				2019			
	Renewable Products	Licenses and Royalties	Grants and Collaborations	TOTAL	Renewable Products	Licenses and Royalties	Grants and Collaborations	TOTAL
Europe	$ 17,156	$50,991	$ 8,765	$ 76,912	$10,092	$54,043	$ 6,674	$ 70,809
United States	68,675	—	526	69,201	34,295	—	24,376	58,671
Asia	13,720	—	8,517	22,237	11,503	—	7,477	18,980
Brazil	4,105	—	—	4,105	3,612	—	115	3,727
Other	682	—	—	682	370	—	—	370
	$104,338	$50,991	$17,808	$173,137	$59,872	$54,043	$38,642	$152,557

Significant Revenue Agreements

Yifan Collaborations

From September 2018 to December 2019, the Company entered into a series of license and collaboration agreements, culminating in a master services agreement for research and development services, with a subsidiary of Yifan Pharmaceutical Co., Ltd. (Yifan), a leading Chinese pharmaceutical company. Upon execution of the master services agreement in December 2019 (the Collaboration Agreement), the Company evaluated and concluded that the series of agreements should be combined and accounted for as a single revenue contract under ASC 606.

The Yifan Collaboration Agreement has a total transaction price of $21.0 million, subject to the variable consideration constraint guidance in ASC 606 using the most likely outcome method to estimate the variable consideration associated with the identified performance obligation. The Company concluded the Collaboration Agreement contained a single performance obligation of research and development services provided continuously over time. The Collaboration Agreement provides for upfront and periodic payments based on project milestones. The Company concluded the performance obligation is delivered continuously over time and that revenue

recognition is based on an input measure of progress as labor hours are expended in the achievement of the performance obligations (i.e., proportional performance). Estimates of variable consideration are updated quarterly, with cumulative adjustments to revenue recorded as necessary. The Company recognized $8.5 million and $6.1 million of collaboration revenue for the 12 months ended December 31, 2020 and 2019, respectively, and $14.6 million of cumulative-to-date collaboration revenue. At December 31, 2020, the Company also recorded a $3.6 million contract asset in connection with the Collaboration Agreement.

Cannabinoid Agreement

On May 2, 2019, the Company consummated a research, collaboration and license agreement (the Cannabinoid Agreement) with LAVVAN, Inc., an investment-backed company (Lavvan), to develop, manufacture and commercialize cannabinoids, subject to certain closing conditions. Under the agreement, the Company would perform research and development activities and Lavvan would be responsible for the manufacturing and commercialization of the cannabinoids developed under the agreement. The Cannabinoid Agreement principally funds milestones that include both technical R&D targets and completion of production campaigns, with the Company also entitled to receive certain supplementary research and development funding from Lavvan. Additionally, the Cannabinoid Agreement provides for profit share to the Company on Lavvan's gross profit margin once products are commercialized. On May 2, 2019, the parties formed a special purpose entity to hold certain intellectual property created during the collaboration (the Cannabinoid Collaboration IP), the licensing of certain Company intellectual property to Lavvan, the licensing of the Cannabinoid Collaboration IP to the Company and Lavvan, and the granting by the Company to Lavvan of a lien on the Company background intellectual property being licensed to Lavvan under the Cannabinoid Agreement, which lien would be subordinated to the lien on such intellectual property under the Foris Convertible Note (see Note 4, "Debt"). On March 11, 2020, the parties revised the agreement to reflect product specifications and cost assumptions.

The Cannabinoid Agreement is accounted for as a revenue contract under ASC 606, with the total transaction price estimated and updated on a quarterly basis, subject to the variable consideration constraint guidance in ASC 606 using the most likely outcome method to estimate the variable consideration associated with the identified performance obligations. The Company concluded the agreement contained a single performance obligation of research and development services. The Company also concluded that the performance obligation is continuously delivered over time and that revenue recognition is based on an input measure of progress of labor hours incurred compared to total estimated labor hours to be incurred (i.e., proportional performance). Estimates of variable consideration are updated quarterly, based on changes in estimated project plan hours, with proportional performance adjustments to quarterly revenue as necessary. Prior to September 30, 2020, the Company estimated the total unconstrained transaction price to be $145 million, based on a high probability of achieving certain underlying milestones, and had recognized $18.3 million of cumulative revenue to date. As of December 31, 2020, the Company has constrained $282 million of variable consideration which relates to milestones that do not meet the criteria necessary under ASC 606 to be included in the transaction price. The Company recognized no collaboration revenue for the 12 months ended December 31, 2020, and in the third quarter of 2020, the Company recorded a credit loss reserve against a previously recorded $8.3 million contract asset in connection with the Cannabinoid Agreement. See Contract Assets and Liabilities below for further information.

Firmenich Agreements

In July 2017, the Company and Firmenich entered into the Firmenich Collaboration Agreement (for the development and commercialization of multiple renewable flavors and fragrances molecules), pursuant to which the parties agreed to exclude certain molecules from the scope of the agreement and to amend certain terms connected with the supply and use of such molecules when commercially produced. In addition, the parties agreed to (i) fix at a 70/30 basis (70% for Firmenich) the ratio at which the parties will share profit margins from sales of two molecules; (ii) set at a 70/30 basis (70% for Firmenich) the ratio at which the parties will share profit

margins from sales of a distinct form of compound until Firmenich receives $15.0 million more than the Company in the aggregate from such sales, after which time the parties will share the profit margins 50/50 and (iii) a maximum Company cost of a compound where a specified purchase volume is satisfied, and alternative production and margin share arrangements in the event such Company cost cap is not achieved.

In August 2018, the Company and Firmenich entered into the Firmenich Amended and Restated Supply Agreement, which incorporates all previous amendments and new changes and supersedes the September 2014 supply agreement. With this Amended and Restated Supply Agreement, the parties agreed on the molecules to be supplied under the agreement and the commercial specifications of these products and made some adjustments to the pricing of the molecules.

Pursuant to the Firmenich Collaboration Agreement, the Company agreed to pay a one-time success bonus to Firmenich of up to $2.5 million if certain commercialization targets are met. Such targets have not yet been met as of December 31, 2020. The one-time success bonus will expire upon termination of the Firmenich Collaboration Agreement, which has an initial term of 10 years and will automatically renew at the end of such term (and at the end of any extension) for an additional 3-year term unless otherwise terminated. At December 31, 2020, the Company had a $0.7 million liability associated with this one-time success bonus that has been recorded as a reduction to the associated collaboration revenue.

DSM Revenue Agreements

DSM License Agreement

In December 2020, the Company and DSM entered into an agreement (Farnesene Framework Agreement) that granted DSM a field of use license covering specific intellectual property (Farnesene Intellectual Property) of the Company used in the production and sale of farnesene under a certain farnesene supply agreement (Farnesene Supply Agreement), and assigned the Company' rights and obligations under the Farnesene Supply Agreement to DSM, in exchange for a non-refundable upfront license fee totaling $40 million, with $30 million due at closing and $10 million due on or before March 31, 2021. The Company is also entitled to two additional of payments of $5 million each if DSM produces and/or sells certain volumes of farnesene under the supply contract before December 31, 2026.

To affect the transaction, the Company granted DSM an exclusive, royalty-bearing, perpetual, world-wide, transferable license to the Farnesene Intellectual Property with the right for DSM to grant and authorize sublicense to affiliates and third parties, to make, have made, import, have imported, use, have used, sell, have sold, offer for sale, or have offered for sale, farnesene solely for purposes currently permitted under the assigned Farnesene Supply Agreement. The specific field of use farnesene license was determined to be functional intellectual property allowing DSM the use and benefit from the technology. The Company concluded the intellectual property license and the assignment and assumption agreement combined to form a combined revenue contract under ASC 606 with a single performance obligation, that once delivered is satisfied at a point in time. The Company also determined the potential additional payments represent variable consideration, rather than a separate performance obligation, since the Company assigned, and DSM assumed, all of the Company's rights and obligations under the supply contract. The contingent payments will be accounted for if and when the contingent events occur similar to the guidance described under the sales-based royalty scope exception in ASC 606-10-55-65.

Given that DSM is a related party, the Company performed an income approach discounted cash flow analysis, in part with the assistance of a third-party valuation firm, and concluded the consideration received in exchange for the intellectual property license and contractual asset represented the fair value and stand-alone selling price of the combined contracts and singular performance obligation. The Company also concluded the license and related supply agreement assignment had been fully delivered with no further performance obligation upon closing the transaction, and recognized license revenue of $40.0 million in the period ended December 31, 2020.

DSM Ingredients Collaboration

In September 2017, the Company entered into a collaboration agreement with DSM (DSM Collaboration Agreement) to jointly develop a new molecule in the Clean Health market using the Company's technology (DSM Ingredient), which the Company would have the sole right to manufacture, and DSM would commercialize. Pursuant to the DSM Collaboration Agreement, DSM provides funding for the development of the DSM Ingredients in the form of milestone-based payments and, upon commercialization, the parties would enter into supply agreements whereby DSM would purchase the applicable DSM Ingredient from the Company at prices agreed by the parties. The development services are directed by a joint steering committee with equal representation by DSM and the Company and are governed by a milestone project plan. The timing of milestone achievements is subject to review and revision as agreed by the joint steering committee. In addition, the parties will share profit margin from DSM's sales of products that incorporate the DSM Ingredient subject to the DSM Collaboration Agreement.

The DSM Collaboration Agreement is accounted for as a revenue contract under ASC 606 and had a total transaction price of $14.1 million, subject to the variable consideration constraint guidance in ASC 606 using the most likely outcome method to estimate the variable consideration associated with the identified performance obligations. The Company concluded the agreement contained milestone performance obligations of research and development services delivered continuously over time and that revenue recognition is based on an input measure of progress as labor hours are expended in the achievement of the performance obligations (i.e., proportional performance).

In the fourth quarter of 2020, the DSM Collaboration Agreement was amended to eliminate all milestone targets in the original project plan and to replace the project plan with funding payments of $2.0 million quarterly from October 1, 2020 to September 30, 2020 for research and development services singularly focused on achieving a certain fermentation yield and cost target over the twelve-month period. The amendment also transfers the Company's manufacturing rights to DSM and replaces the value share payments with a tiered perpetual royalty scheme that provides Amyris royalties upon commercialization at the specific cost target, if achieved. The initial royalty rate decreases through year 10 and then reduces to 2% thereafter. DSM's decision to commercialize with the Amyris technology is subject to certain conditions, including achievement of the cost target.

This amendment was determined to be a contract modification under ASC 606 and accounted for as a separate contract due to the change in the scope of each parties' rights and obligations and the change in transaction price. The Company concluded the agreement contained a single performance obligation to provide research and development services delivered over time and that revenue recognition is based on an input measure of progress as labor hours are expended each quarter. The right to receive royalties on future product sales will be accounting for as variable consideration under the the sales-based royalty exception, which requires the Company to estimate the revenue to be recognized at a point in time when the licensee's product sales occur. The Company recognized $7.0 million and $4.9 million of revenue for the year ended December 31, 2020 and 2019, respectively, and $11.9 million of cumulative-to-date collaboration revenue related to the DSM Collaboration Agreement, as amended.

DSM Value Sharing Agreement

In December 2017, the Company and DSM entered into a value sharing agreement (Value Sharing Agreement), pursuant to which DSM agreed to make certain royalty payments to the Company representing a portion of the profit on the sale of products produced using farnesene purchased under a third party supply agreement with DSM.

In April 2019, the Company assigned to DSM, and DSM assumed, all of the Company's rights and obligations under the Value Sharing Agreement for aggregate consideration to the Company of $57.0 million, which included $7.4 million (less a discount for early payment of $0.7 million) received on March 29, 2019 for the third and final guaranteed annual royalty payment due under the original agreement.

The original Value Sharing Agreement was accounted for as a single performance obligation in connection with an intellectual property license with fixed and determinable consideration and variable consideration that was accounted for pursuant to the sales-based royalty scope exception. The April 2019 assignment of the Value Sharing Agreement was accounted for as a contract modification under ASC 606, resulting in additional fixed and determinable consideration of $37.1 million and variable consideration of $12.5 million in the form of a stand-ready obligation to refund some or all of the $12.5 million consideration if certain criteria outlined in the assignment agreement are not met by December 2021. The Company periodically updated its estimate of amounts to be retained and reduced the refund liability and recorded additional license and royalty revenue as the criteria were met. The effect of the contract modification on the transaction price, and on the Company's measure of progress toward complete satisfaction of the performance obligation was recognized as an adjustment to revenue at the date of the contract modification on a cumulative catch-up basis. As a result, the Company recognized $37.1 million of license and royalty in the second quarter of 2019, due to fully satisfying the performance obligation at the modification date. The Company also recognized an additional $3.6 million of previously deferred royalty revenue under the Value Sharing Agreement, as the remaining underlying performance obligation was fully satisfied through the April 16, 2019 assignment of the agreement to DSM. The Company recorded an additional $8.8 million and $3.7 million of license and royalty revenue in the fourth quarter of 2019 and the first quarter of 2020, respectively, related to a change in the estimated refund liability.

In connection with the significant revenue agreements discussed above and others previously disclosed, the Company recognized revenue for the years ended December 31, 2020 and 2019 in connection with significant revenue agreements and from all other customers as follows:

	2020				2019			
Years Ended December 31, (In thousands)	**Renewable Products**	**Licenses and Royalties**	**Grants and Collaborations**	**TOTAL**	**Renewable Products**	**Licenses and Royalties**	**Grants and Collaborations**	**TOTAL**
Revenue from significant revenue agreements with:								
DSM (related party)	$ 946	$43,750	$ 7,018	$ 51,714	$ 10	$49,051	$ 4,120	$ 53,181
Firmenich	9,967	7,241	594	17,802	8,591	4,992	1,413	14,996
Sephora	13,802	—	—	13,802	8,666	—	—	8,666
Givaudan	10,081	—	—	10,081	7,477	—	1,500	8,977
DARPA	—	—	526	526	—	—	5,504	5,504
Lavvan	—	—	—	—	—	—	18,342	18,342
Subtotal revenue from significant revenue agreements	34,796	50,991	8,138	93,925	24,744	54,043	30,879	109,666
Revenue from all other customers	69,542	—	9,670	79,212	35,128	—	7,763	42,891
Total revenue from all customers	$104,338	$50,991	$17,808	$173,137	$59,872	$54,043	$38,642	$152,557

Contract Assets and Liabilities

When a contract results in revenue being recognized in excess of the amount the Company has invoiced or has the right to invoice to the customer, a contract asset is recognized. Contract assets are transferred to accounts receivable, net when the rights to the consideration become unconditional.

Contract liabilities consist of payments received from customers, or such consideration that is contractually due, in advance of providing the product or performing services such that control has not passed to the customer.

Trade receivables related to revenue from contracts with customers are included in accounts receivable on the consolidated balance sheets, net of the allowance for doubtful accounts. Trade receivables are recorded at the point of renewable product sale or in accordance with the contractual payment terms for licenses and royalties, and grants and collaborative research and development services for the amount payable by the customer to the Company for sale of goods or the performance of services, and for which the Company has the unconditional right to receive payment.

Contract Balances

The following table provides information about accounts receivable and contract liabilities from contracts with customers:

December 31, (In thousands)	2020	2019
Accounts receivable, net	$32,846	$16,322
Accounts receivable - related party, net	$12,110	$ 3,868
Contract assets	$ 4,178	$ 8,485
Contract assets - related party	$ 1,203	$ —
Contract assets, noncurrent - related party	$ —	$ 1,203
Contract liabilities	$ 4,468	$ 1,353
Contract liabilities, noncurrent[1]	$ 111	$ 1,449

[1] The balances in contract liabilities, noncurrent are included in other noncurrent liabilities on the consolidated balance sheets.

Contract liabilities, current increased by $3.1 million at December 31, 2020 resulting from collaboration and royalty amounts invoiced to customers during the year ended December 31, 2020 but not recognized as revenue.

During the third quarter of 2020, the collaboration partner in the Cannabinoid Agreement filed certain litigation claims and, among other things, alleged breach of contract. As a result, the Company concluded that realization and recoverability of the $8.3 million contract asset recorded in connection with the Cannabinoid Agreement was no longer probable and consequently, recorded an $8.3 million credit loss reserve against the contract asset for the year ended December 31, 2020.

Remaining Performance Obligations

The following table provides information regarding the estimated revenue expected to be recognized in the future related to performance obligations that are unsatisfied (or partially unsatisfied) based on the Company's existing agreements with customers as of December 31, 2020.

(In thousands)	As of December 31, 2020
2021	$5,158
2022	1,517
2023	143
2024	143
2025 and thereafter	286
Total from all customers	$7,247

In accordance with the disclosure provisions of ASC 606, the table above excludes estimated future revenues for performance obligations that are part of a contract that has an original expected duration of one year or less or a

performance obligation with variable consideration that is recognized using the sales-based royalty exception for licenses of intellectual property. Additionally, $297.8 million of estimated future revenue is excluded from the table above, as that amount represents constrained variable consideration.

11. Related Party Transactions

Related Party Debt

See Note 4, "Debt" for details of these related party debt transactions:

- 2014 Rule 144A Note exchange, extensions and conversion – Total
- DSM credit agreements
- Foris $5 million Note
- Foris Convertible Note
- Foris LSA Amendment
- Naxyris LSA
- Naxyris LSA Amendment

Related party debt was as follows:

	2020				2019			
(In thousands)	Principal	Unaccreted Debt (Discount) Premium	Fair Value Adjustment	Net	Principal	Unaccreted Debt (Discount) Premium	Fair Value Adjustment	Net
DSM notes	$33,000	$(2,443)	$ —	$ 30,557	$33,000	$ (4,621)	$—	$28,379
Foris								
Foris convertible note	50,041	—	73,123	123,164	—	—	—	—
Foris promissory notes	5,000	—	—	5,000	115,351	(9,516)	—	105,835
	55,041	—	73,123	128,164	115,351	(9,516)	—	105,835
Naxyris note	23,914	(493)	—	23,421	24,437	(822)	—	23,615
Total 2014 Rule 144A convertible note	—	—	—	—	10,178	—	—	10,178
	$111,955	$(2,936)	$73,123	$182,142	$182,966	$(14,959)	$—	$168,007

The following table provides a reconciliation of the beginning and ending balances for the Company's derivative liabilities recognized in connection with the issuance of related party debt instruments:

(In thousands)	Foris LSA	Naxyris Note	TOTAL 2014 144A Convertible Note	Total Related Party Debt-related Derivative Liability
Balance at December 31, 2019	$ 1,678	$ 508	$ —	$ 2,186
Fair value of derivative liabilities issued during the period	747	—	—	747
(Gain) loss on change in fair value	(64)	(320)	6,461	6,077
Derecognition on extinguishment	(2,361)	—	(6,461)	(8,822)
Balance at December 31, 2020	$ —	$ 188	$ —	$ 188

For additional information, see Note 3, "Fair Value Measurement".

Related Party Equity

See Note 6, "Stockholders' Deficit" for details of these related party equity transactions:

- Foris warrant exercises for cash
- Foris warrant exercise, common stock purchase and debt equitization
- January 2020 private placement, in which Foris purchased 5,226,481 shares of common stock
- June 2020 private placement, in which Foris and affiliated entities purchased 30,000 shares of Series E convertible preferred stock, which automatically converted into 9,999,999 shares of common stock in August 2020 after stockholders approved the conversion of the Series E convertible preferred stock and corresponding issuance of underlying common shares
- June 2020 private placement, in which Vivo Capital LLC and affiliated entities purchased 3,689,225 shares of common stock and 8,932.32 shares of Series E convertible preferred stock, which automatically converted into 2,977,442 shares of common stock in August 2020 after stockholders approved the conversion of the Series E convertible preferred stock and corresponding issuance of underlying common shares

Related Party Revenue

The Company recognized revenue from related parties and from all other customers as follows:

Years Ended December 31, (In thousands)	2020 Renewable Products	2020 Licenses and Royalties	2020 Grants and Collaborations	2020 TOTAL	2019 Renewable Products	2019 Licenses and Royalties	2019 Grants and Collaborations	2019 TOTAL
Revenue from related parties:								
DSM	$ 946	$43,750	$ 7,018	$ 51,714	$ 10	$49,051	$ 4,120	$ 53,181
Daling (affiliate of a Board member)	40	—	—	40	—	—	—	—
Total	—	—	—	—	46	—	—	46
Subtotal revenue from related parties	986	43,750	7,018	51,754	56	49,051	4,120	53,227
Revenue from all other customers	103,352	7,241	10,790	121,383	59,816	4,992	34,522	99,330
Total revenue from all customers	$104,338	$50,991	$17,808	$173,137	$59,872	$54,043	$38,642	$152,557

See Note 10, "Revenue Recognition" for details of the Company's revenue agreements with DSM.

Related Party Accounts Receivable

Related party accounts receivable was as follows:

December 31, (In thousands)	2020	2019
DSM	$12,110	$3,868

In addition to the amounts shown above, the following amounts were on the consolidated balance sheet at December 31, 2020 and December 31, 2019, respectively:

- $0 and $1.2 million of unbilled receivables from DSM in Contract assets, noncurrent - related party; and
- $0 and $3.3 million of contingent consideration receivable from DSM in Other assets.

Related Party Accounts Payable and Accrued Liabilities

The following amounts due to DSM on the consolidated balance sheet at December 31, 2020 and December 31, 2019 were as follows, respectively:

- Accounts payable and accrued and other current liabilities of $5.0 million and $14.0 million at December 31, 2020 and December 31, 2019, respectively; and
- Other noncurrent liabilities of $0 and $3.8 million at December 31, 2020 and December 31, 2019, respectively.

Related Party DSM Transactions

The Company is party to the following significant agreements (and related amendments) with DSM:

Related to	Agreement	For Additional Information, See the Note Indicated
Debt	DSM Credit Agreement	4. Debt
Debt	2019 DSM Credit Agreement	4. Debt
Revenue	Farnesene Framework Agreement	10. Revenue Recognition
Revenue	DSM Collaboration Agreement	10. Revenue Recognition
Revenue	DSM Value Sharing Agreement	10. Revenue Recognition

Related Party Joint Venture

In December 2016, the Company, Nikko Chemicals Co., Ltd. an existing commercial partner of the Company, and Nippon Surfactant Industries Co., Ltd., an affiliate of Nikko (collectively, Nikko) entered into a joint venture (the Aprinnova JV Agreement) pursuant to which the Company contributed certain assets, including certain intellectual property and other commercial assets relating to its business-to-business cosmetic ingredients business (the Aprinnova JV Business), as well as its Leland production facility. See Note 7 "Variable Interest Entities and Joint Ventures" for information regarding the business transactions with Nikko and the assets and liabilities of this related party joint venture.

Office Sublease

The Company subleases certain office space to Novvi, for which the Company charged Novvi $0.6 million and $0.6 million for the years ended December 31, 2020 and 2019, respectively.

12. Stock-based Compensation

Stock-based Compensation Expense Related to All Plans

Stock-based compensation expense related to all employee stock compensation plans, including options, restricted stock units and ESPP, was as follows:

Years Ended December 31, (In thousands)	2020	2019
Research and development	$ 3,871	$ 2,900
Sales, general and administrative	9,872	9,654
Total stock-based compensation expense	$13,743	$12,554

Plans

2020 Equity Incentive Plan

On June 22, 2020 the Company's 2020 Equity Incentive Plan (2020 Equity Plan) became effective and will terminate in 2030. The 2020 Equity Plan succeeded the 2010 Equity Plan (which provided terms and conditions similar to those governing the 2020 Equity Plan) and provides for the grant of incentive stock options (ISOs) intended to qualify for favorable tax treatment under Section 422 of the U.S. Internal Revenue Code for their recipients, non-statutory stock options (NSOs), restricted stock awards, stock bonuses, stock appreciation rights,

restricted stock units and performance awards. ISOs may be granted only to Company employees or employees of its subsidiaries and affiliates. NSOs may be granted to eligible Company employees, consultants and directors or any of the Company's parent, subsidiaries or affiliates. The Company is able to issue up to 30,000,000 shares pursuant to the grant of ISOs under the 2020 Equity Plan. The Leadership, Development, Inclusion, and Compensation Committee of the Board of Directors (LDICC) determines the terms of each option award, provided that ISOs are subject to statutory limitations. The LDICC also determines the exercise price for a stock option, provided that the exercise price of an option may not be less than 100% (or 110% in the case of recipients of ISOs who hold more than 10% of the Company's stock on the option grant date) of the fair market value of the Company's common stock on the date of grant. Options granted under the 2020 Equity Plan vest at the rate specified by the LDICC and such vesting schedule is set forth in the stock option agreement to which such stock option grant relates. Generally, the LDICC determines the term of stock options granted under the 2020 Plan, up to a term of ten years (or five years in the case of ISOs granted to 10% stockholders).

As of December 31, 2020, options were outstanding to purchase 6,502,096 shares of the Company's common stock granted under the 2020 and 2010 Equity Plans, with weighted-average exercise price per share of $7.64. In addition, as of December 31, 2020, restricted stock units representing the right to receive 7,043,909 shares of the Company's common stock granted under the 2020 and 2010 Equity Plans were outstanding. As of December 31, 2020, 5,782,707 shares of the Company's common stock remained available for future awards that may be granted under the 2020 Equity Plan. Upon the effective date of the 2020 Equity Plan, the Company no longer has shares available for issuance under the 2010 Equity Plan.

The number of shares reserved for issuance under the 2020 Equity Plan increases automatically on January 1 of each year starting with January 1, 2021, by a number of shares equal to 5% of the Company's total outstanding shares as of the immediately preceding December 31. However, the Company's Board of Directors or the LDICC retains the discretion to reduce the amount of the increase in any particular year.

2010 Employee Stock Purchase Plan

The 2010 Employee Stock Purchase Plan (2010 ESPP) became effective on September 27, 2010. The 2010 ESPP is designed to enable eligible employees to purchase shares of the Company's common stock at a discount. Offering periods under the 2010 ESPP generally commence on each May 16 and November 16, with each offering period lasting for one year and consisting of two six-month purchase periods. The purchase price for shares of common stock under the 2010 ESPP is the lesser of 85% of the fair market value of the Company's common stock on the first day of the applicable offering period or the last day of each purchase period. During the life of the 2010 ESPP, the number of shares reserved for issuance increases automatically on January 1 of each year, starting with January 1, 2011, by a number of shares equal to 1% of the Company's total outstanding shares as of the immediately preceding December 31. However, the Company's Board of Directors or the LDICC retains the discretion to reduce the amount of the increase in any particular year. In May 2018, shareholders approved an amendment to the 2010 ESPP to increase the maximum number of shares of common stock that may be issued over the term of the ESPP by 1 million shares. No more than 1,666,666 shares of the Company's common stock may be issued under the 2010 ESPP and no other shares may be added to this plan without the approval of the Company's stockholders.

2018 CEO Performance-based Stock Options

In May 2018, the Company granted its chief executive officer performance-based stock options (PSOs) to purchase 3,250,000 shares. PSOs are equity awards with the final number of PSOs that may vest determined based on the Company's performance against pre-established EBITDA milestones and Amyris stock price milestones. The EBITDA milestones are measured from the grant date through December 31, 2021, and the stock price milestones are measured from the grant date through December 31, 2022. The PSOs vest in four tranches contingent upon the achievement of both the EBITDA milestones and stock price milestones for each respective

tranche, and the chief executive officer's continued employment with the Company. Over the measurement periods, the number of PSOs that may be issued and the related stock-based compensation expense that is recognized is adjusted upward or downward based upon the probability of achieving the EBITDA milestones. Depending on the probability of achieving the EBITDA milestones and stock price milestones and certification of achievement of those milestones for each vesting tranche by the Company's Board of Directors or the LDICC, the PSOs issued could be from zero to 3,250,000 stock options, with an exercise price of $5.08 per share.

Stock-based compensation expense for this award is recognized using a graded-vesting approach over the service period beginning at the grant date through December 31, 2022, as the Company's management has determined that certain EBITDA milestones are probable of achievement over the next four years as of December 31, 2020, The Company utilized a Monte Carlo simulation to estimate the grant date fair value of each tranche of the award which totaled $5.1 million. For the years ended December 31, 2020 and 2019, the Company recognized $0.4 million and $0.7 million, respectively, of compensation expense for this award. The assumptions used to estimate the fair value of this award with performance and market vesting conditions were as follows:

Stock Option Award with Performance and Market Vesting Conditions:	
Fair value of the Company's common stock on grant date	$5.08
Expected volatility	70%
Risk-free interest rate	2.8%
Dividend yield	0.0%

Stock Option Activity

Stock option activity is summarized as follows:

Year ended December 31,	**2020**	**2019**
Options granted	1,269,808	530,140
Weighted-average grant-date fair value per share	$ 3.75	$ 3.83
Compensation expense related to stock options (in millions)	$ 2.1	$ 2.0
Unrecognized compensation costs as of December 31 (in millions)	$ 5.2	$ 4.5

The Company expects to recognize the December 31, 2020 balance of unrecognized costs over a weighted-average period of 2.3 years. Future option grants will increase the amount of compensation expense to be recorded in these periods.

Stock-based compensation expense for stock options and employee stock purchase plan rights is estimated at the grant date and offering date, respectively, based on a fair-value derived from using the Black-Scholes-Merton option pricing model. The fair value of employee stock options is amortized on a ratable basis over the requisite service period of the awards. The fair value of employee stock options and employee stock purchase plan rights was estimated using the following weighted-average assumptions:

Years Ended December 31,	**2020**	**2019**
Expected dividend yield	—%	—%
Risk-free interest rate	0.7%	1.8%
Expected term (in years)	6.9	6.9
Expected volatility	89%	84%

The expected life of options is based primarily on historical exercise experience of the employees for options granted by the Company. All options are treated as a single group in the determination of expected life, as the Company does not currently expect substantially different exercise or post-vesting termination behavior among the employee population. The risk-free interest rate is based on the U.S. Treasury yield for a term consistent with the expected life of the awards in effect at the time of grant. Expected volatility is based on the historical volatility of the Company's common stock price. The Company has no history or expectation of paying dividends on common stock.

Stock-based compensation expense associated with options is based on awards ultimately expected to vest. At the time of an option grant, the Company estimates the expected future rate of forfeitures based on historical experience. These estimates are revised, if necessary, in subsequent periods if actual forfeiture rates differ from those estimates. If the actual forfeiture rate is lower than estimated the Company will record additional expense and if the actual forfeiture is higher than estimated the Company will record a recovery of prior expense.

The Company's stock option activity and related information for the year ended December 31, 2020 was as follows:

	Number of Stock Options	Weighted-average Exercise Price	Weighted-average Remaining Contractual Life (in years)	Aggregate Intrinsic Value (in thousands)
Outstanding - December 31, 2019	5,620,419	$10.27	7.8	$ 24
Options granted	1,269,808	$ 3.75		
Options exercised	(13,213)	$ 3.48		
Options forfeited or expired	(374,918)	$ 34.05		
Outstanding - December 31, 2020	6,502,096	$ 7.64	7.6	$ 8,875
Vested or expected to vest after December 31, 2020	5,970,394	$ 7.90	7.5	$8,120
Exercisable at December 31, 2020	1,551,942	$16.90	6.2	$1,708

The aggregate intrinsic value of options exercised under all option plans was $0 and $0 for the years ended December 31, 2020 and 2019, respectively, determined as of the date of option exercise.

Restricted Stock Units Activity and Expense

During the years ended December 31, 2020 and 2019, 4,415,209 and 2,996,660 RSUs, respectively, were granted with weighted-average service-inception date fair value per unit of $3.72 and $3.96, respectively. The Company recognized RSU-related stock-based compensation expense of $11.0 million and $10.2 million, respectively, for the years ended December 31, 2020 and 2019. As of December 31, 2020 and 2019, unrecognized RSU-related compensation costs totaled $23.9 million and $22.3 million, respectively.

Stock-based compensation expense for RSUs is measured based on the NASDAQ closing price of the Company's common stock on the date of grant.

The Company's RSU activity and related information for the year ended December 31, 2020 was as follows:

	Number of Restricted Stock Units	Weighted-average Grant-date Fair Value	Weighted-average Remaining Contractual Life (in years)
Outstanding - December 31, 2019	5,782,651	$4.77	1.7
Awarded	4,415,209	$3.72	
Vested	(2,327,516)	$4.77	
Forfeited	(826,435)	$ 4.17	
Outstanding - December 31, 2020	7,043,909	$ 4.18	1.5
Vested or expected to vest after December 31, 2020	6,432,500	$ 4.20	1.4

ESPP Activity and Expense

During the years ended December 31, 2020 and 2019, 357,655 and 318,490 shares, respectively, of the Company's common stock were purchased under the 2010 ESPP. At December 31, 2020 and 2019, 494,855 and 263,797 shares, respectively, of the Company's common stock remained reserved for issuance under the 2010 ESPP.

During the years ended December 31, 2020 and 2019, the Company also recognized ESPP-related stock-based compensation expense of $0.6 million and $0.4 million, respectively.

13. Income Taxes

Recent Tax Legislation

Coronavirus Aid, Relief and Economic Security Act

On March 27, 2020, the Coronavirus Aid, Relief, and Economic Security Act (the CARES Act) was enacted and signed into law in response to the market volatility and instability resulting from the COVID-19 pandemic. It includes a significant number of tax provisions and lifts certain deduction limitations originally imposed by the Tax Cuts and Jobs Act of 2017 (the 2017 Act). The changes are mainly related to: (1) the business interest expense disallowance rules for 2019 and 2020; (2) net operating loss rules; (3) charitable contribution limitations; (4) employee retention credit; and (5) the realization of corporate alternative minimum tax credits. The Company does not anticipate the application of the CARES Act provisions to materially impact the overall Consolidated Financial Statements.

Provision for Income Taxes

The components of loss before income taxes and loss from investment in affiliate are as follows:

Years Ended December 31, (In thousands)	2020	2019
United States	$(324,720)	$(227,614)
Foreign	(6,015)	(14,524)
Loss before income taxes and loss from investment in affiliate	$(330,735)	$(242,138)

The components of the provision for income taxes are as follows:

Years Ended December 31, (In thousands)	2020	2019
Current:		
Federal	$293	$621
State	—	—
Foreign	—	8
Total current provision	293	629
Deferred:		
Federal	—	—
State	—	—
Foreign	—	—
Total deferred provision	—	—
Total provision for income taxes	$293	$629

A reconciliation between the statutory federal income tax and the Company's effective tax rates as a percentage of loss before income taxes and loss from investments in affiliate is as follows:

Years Ended December 31,	2020	2019
Statutory tax rate	(21.0)%	(21.0)%
Federal R&D credit	(0.6)%	(0.7)%
Derivative liability	4.8%	4.7%
Nondeductible interest	0.5%	1.0%
Other	0.3%	2.4%
Foreign losses	0.4%	0.9%
Change in fair value of convertible debt	5.7%	—%
Change in valuation allowance	10.0%	13.0%
Effective income tax rate	0.1%	0.3%

Temporary differences and carryforwards that gave rise to significant portions of deferred taxes are as follows:

December 31, (In thousands)	2020	2019
Net operating loss carryforwards	$123,638	$ 88,513
Property, plant and equipment	6,965	8,239
Research and development credits	18,279	15,002
Foreign tax credit	—	—
Accruals and reserves	12,003	13,934
Stock-based compensation	4,291	6,164
Disallowed interest carryforward	10,843	7,072
Capitalized research and development costs	16,390	21,723
Intangible and others	1,888	2,503
Equity investments	531	304
Total deferred tax assets	194,828	163,454

December 31, (In thousands)	2020	2019
Operating lease right-of-use assets	(2,051)	(2,643)
Debt discounts and derivatives	(774)	(7,176)
Total deferred tax liabilities	(2,825)	(9,819)
Net deferred tax assets prior to valuation allowance	192,003	153,635
Less: deferred tax assets valuation allowance	(192,003)	(153,635)
Net deferred tax assets	$ —	$ —

Activity in the deferred tax assets valuation allowance is summarized as follows:

(In thousands)	Balance at Beginning of Year	Additions	Reductions / Charges	Balance at End of Year
Deferred tax assets valuation allowance:				
Year ended December 31, 2020	$153,635	$38,368	$—	$192,003
Year ended December 31, 2019	$124,025	$29,610	$—	$153,635

Recognition of deferred tax assets is appropriate when realization of such assets is more likely than not. Based on the weight of available evidence, especially the uncertainties surrounding the realization of deferred tax assets through future taxable income, the Company believes that it is more likely than not that the net deferred tax assets will not be fully realizable. Accordingly, the Company has provided a full valuation allowance against its net deferred tax assets as of December 31, 2020 and 2019. The valuation allowance increased by increased by $38.4 million during the year ended December 31, 2020 and $29.6 million during the year ended December 31, 2019.

As of December 31, 2020, the Company had federal net operating loss carryforwards of $568.8 million and state net operating loss carryforwards of $181.9 million available to reduce future taxable income, if any. The Internal Revenue Code of 1986, as amended, imposes restrictions on the utilization of net operating losses in the event of an "ownership change" of a corporation. Accordingly, a company's ability to use net operating losses may be limited as prescribed under Internal Revenue Code Section 382 (IRC Section 382). Events that may cause limitations in the amount of net operating losses that the Company may use in any one year include, but are not limited to, a cumulative ownership change of more than 50% over a three-year period. During the year ended December 31, 2019, the Company experienced a greater than 50% ownership shift on April 16, 2019. Per the Section 382 analysis, this 2019 ownership change did not result in a limitation such that there would be any permanent loss of NOL or research tax credit carryovers. Any NOLs and other tax attributes generated by the Company subsequent to April 16, 2019 are currently not subject to any IRC Section 382 limitations. The Company notes that federal net operating losses generated during 2018, 2019 and 2020 have an indefinite carryover life and that NOL utilization is limited to 80% of taxable income. As of December 31, 2020, the Company had foreign net operating loss carryovers of $23.4 million.

As of December 31, 2020, the Company had federal research and development credit carryforwards of $5.2 million and California research and development credit carryforwards of $16.8 million.

If not utilized, the federal net operating loss carryforward will begin expiring in 2034, and the California net operating loss carryforward will begin expiring in 2031. The federal research and development credit carryforwards will expire starting in 2037 if not utilized. The California research and development credit carryforwards can be carried forward indefinitely.

A reconciliation of the beginning and ending amounts of unrecognized tax benefits is as follows:

(In thousands)	
Balance as of December 31, 2018	$30,127
Increases in tax positions for prior period	—
Increases in tax positions during current period	1,411
Balance as of December 31, 2019	31,538
Increases in tax positions for prior period	—
Increases in tax positions during current period	1,556
Balance as of December 31, 2020	$33,094

The Company's policy is to include interest and penalties related to unrecognized tax benefits within the provision for income taxes. The Company accrued $0.3 million and $0.6 million for such interest for the years ended December 31, 2020 and 2019, respectively.

The total amount of unrecognized tax benefits that, if recognized, would impact the effective tax rate is $7.0 million and $7.0 million for the years ended December 31, 2020 and 2019, respectively. The Company believes it is reasonably possible that up to approximately $7.0 million of unrecognized tax benefits may reverse in the next 12 months.

The Company's primary tax jurisdiction is the United States. For United States federal and state income tax purposes, returns for tax years from 2006 through the current year remain open and subject to examination by the appropriate federal or state taxing authorities. Brazil tax years from 2011 through the current year remain open and subject to examination.

As of December 31, 2020, the U.S. Internal Revenue Service (the IRS) has completed its audit of the Company for tax year 2008 and concluded that there were no adjustments resulting from the audit. While the statutes are closed for tax year 2008, the U.S. federal tax carryforwards (net operating losses and tax credits) may be adjusted by the IRS in the year in which the carryforward is utilized.

14. Geographical Information

The chief operating decision maker is the Company's Chief Executive Officer, who makes resource allocation decisions and assesses business performance based on financial information presented on a consolidated basis. There are no segment managers who are held accountable by the chief operating decision maker, or anyone else, for operations, operating results, and planning for levels or components below the consolidated unit level. Accordingly, the Company has determined that it has a single reportable segment and operating segment structure.

Revenue

Revenue by geography, based on each customer's location, is shown in Note 10, "Revenue Recognition".

Property, Plant and Equipment

December 31, (In thousands)	2020	2019
United States	$14,686	$13,799
Brazil	16,845	14,277
Europe	1,344	854
	$32,875	$28,930

15. Subsequent Events

Senior Convertible Notes Conversion

On February 4, 2021, the Company received a notice of conversion from HT Investments MA, LLC (HT) with respect to $20.0 million its outstanding Senior Convertible Note, pursuant to which the Company issued 5.7 million shares of common stock per the conversion price stated in the agreement and cancelled the outstanding Note. Under the terms of the Senior Convertible Note, HT was required to return 2.6 million shares of common stock outstanding under the Pre-Delivery Shares provision once the Company had fully repaid the principal balance. HT fulfilled its obligation to return these shares in accordance with the contractual requirement. See Note 4, "Debt" for information regarding the Pre-Delivery Shares.

Schottenfeld Note Conversion

On March 1, 2021, the Company entered into an Exchange and Settlement Agreement (Exchange Agreement) with Schottenfeld Opportunities Fund II, L.P. and certain other holders of Notes under the Credit and Security Agreement dated November 14, 2019 (Schottenfeld Notes). Pursuant to the terms of the Exchange Agreement, the Company paid all accrued and unpaid interest on the $12.5 million principal balance outstanding under the Schottenfeld Notes, and issued 6.8 million shares of common stock in exchange and cancellation of all amounts due and outstanding under the Notes and related loan documents and all warrants held by each of the holders of Schottenfeld Notes. See Note 4, "Debt" for information regarding the Schottenfeld Notes.

DSM Notes Amendment

On March 1, 2021, the Company entered into an Amendment to Notes (the Amendment) with DSM Finance, B.V. (DSM) to amend a promissory note dated as of December 28, 2017 (the 2017 Note) under the DSM Credit Agreement and certain other promissory notes dated September 17, 2019, September 19, 2019, and September 23, 2019 (the 2019 Notes and, together with the 2017 note, the Notes) under the 2019 DSM Credit Agreement. Pursuant to the terms of the Amendment, if the Company redeems the Notes on or before March 31, 2021, the Company will pay a prepayment fee of $2.5 million; if the Notes are not so redeemed, the interest rate on the 2017 Note will be increased from 2.50% to 5.85% per quarter beginning April 1, 2021 (such additional 3.35% interest, the incremental interest). If the Company redeems the Notes any time between April 1, 2021 and the December 31, 2021, the Company will pay a prepayment fee of $2.5 million, minus the incremental interest paid to date, plus 4% per quarter on the $2.5 million fee for days elapsed between April 1, 2021 and such redemption date. See Note 4, "Debt" for information regarding the DSM Credit Agreement and 2019 DSM Credit Agreement.

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

Disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended ("Exchange Act")) are designed to provide reasonable assurance that information required to be disclosed in reports we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the rules and forms of the SEC and that such information is accumulated and communicated to our management, including the Chief Executive Officer and Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosures.

Under the supervision and with the participation of our management, including the Chief Executive Officer and the Chief Financial Officer, we carried out an evaluation of the effectiveness of the design and operation of our disclosure controls and procedures as of the end of the period covered by this Annual Report on Form 10-K. Based on this evaluation, the Company's Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures were effective at the reasonable assurance level as of December 31, 2020.

Management's Report on Internal Control Over Financial Reporting

Management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rules 13a-15(f) and 15d-15(f). Under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, we conducted an evaluation of the effectiveness of our internal control over financial reporting as of December 31, 2020 based on the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) *Internal Control-Integrated Framework* (2013). Our internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external reporting purposes in accordance with U.S. generally accepted accounting principles. Based on our assessment and those criteria, management concluded that the Company maintained effective internal control over financial reporting as of December 31, 2020.

The effectiveness of the Company's internal control over financial reporting as of December 31, 2020 has been audited by Macias, Gini & O'Connell LLP, an independent registered public accounting firm, as stated in their report, as shown below. Macias, Gini & O'Connell, LLP's report on the consolidated financial statements appears under Part II, Item 8 of this Annual Report on Form 10-K.

Remediation of Prior Year Material Weakness

We previously identified and disclosed in our 2019 Annual Report on Form 10-K, as well as in our Quarterly Reports on Form 10-Q (Form 10-Q) for each interim period in fiscal 2020, a material weakness in our internal control over financial reporting regarding the following:

- The Company did not have an effective internal and external information and communication process to ensure that relevant and reliable information was communicated timely across the organization, to enable financial personnel to effectively carry out their financial reporting and internal control roles and responsibilities.

As a consequence of the ineffective communication components, the Company did not design, implement, and maintain effective control activities at the transaction level over debt-related liability accounts to mitigate the risk of material misstatement in financial reporting, specifically;

- The Company did not design and operate effective controls over significant non-routine transactions related to certain debt-related contractual liabilities.

During 2020, we successfully completed the testing necessary to conclude that the controls were operating effectively as of December 31, 2020 and have concluded that the material weakness related to communication processes that caused the ineffective operation of controls over certain non-routine debt-related transactions has been remediated.

Changes in Internal Control Over Financial Reporting

Subject to our remediation efforts discussed above, there were no changes in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting during the quarter ended December 31, 2020.

Inherent Limitations on the Effectiveness of Controls

Our management, including our Chief Executive Officer and Chief Financial Officer, believes that our disclosure controls and procedures and internal control over financial reporting are designed to provide reasonable assurance of achieving their objectives and are effective at the reasonable assurance level. However, our management does not expect that our disclosure controls and procedures or our internal control over financial reporting will prevent all errors and all fraud. 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, 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 persons or by management override of the controls. The design of any system of controls also is 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.

Report of Independent Registered Public Accounting Firm

Board of Directors and Stockholders of Amyris, Inc.

Opinion on Internal Control over Financial Reporting

We have audited Amyris, Inc. and subsidiaries' (the "Company") internal control over financial reporting as of December 31, 2020, based on criteria established in Internal Control — Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO"). In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2020, based on criteria established in Internal Control – Integrated Framework (2013) issued by COSO.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) ("PCAOB"), the consolidated balance sheets of the Company as of December 31, 2020 and 2019, the related consolidated statements of operations, comprehensive loss, stockholders' deficit and mezzanine equity and cash flows for the years then ended, and the related notes (collectively, the consolidated financial statements), and our report dated March 5, 2021 expressed an unqualified opinion on those consolidated financial statements.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Item 9A, Management's Annual Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

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

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with accounting principles generally accepted in the United States of America. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the entity; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with accounting principles generally accepted in the United States of America, and that receipts and expenditures of the entity are being made only in accordance with authorizations of

management and directors of the entity; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

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

/s/ Macias Gini & O'Connell LLP

San Francisco, California
March 5, 2021

Item 9B. Other Information

Item 1.01 Entry into Material Definitive Agreement

Please see Note 15, "Subsequent Events" for information regarding the DSM Notes Amendment.

Item 1.02 Termination of Material Definitive Agreement

Please see Note 15, "Subsequent Events" for information regarding the Schottenfeld Note Conversion.

Part III

Certain information required by Part III is omitted from this Form 10-K because the registrant will file with the U.S. Securities and Exchange Commission a definitive proxy statement pursuant to Regulation 14A of the Exchange Act in connection with the solicitation of proxies for the Company's 2021 Annual Meeting of Stockholders (the 2021 Proxy Statement) within 120 days after the end of the fiscal year covered by this Form 10-K, and certain information included therein is incorporated herein by reference.

Item 10. Directors, Executive Officers and Corporate Governance

The information required under this Item 10 is incorporated by reference to the 2021 Proxy Statement.

Item 11. Executive Compensation

The information required under this Item 11 is incorporated by reference to the 2021 Proxy Statement.

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

The information required under this Item 12 is incorporated by reference to the 2021 Proxy Statement.

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

The information required under this Item 13 is incorporated by reference to the 2021 Proxy Statement.

Item 14. Principal Accounting Fees and Services

The information required under this Item 14 is incorporated by reference to the 2021 Proxy Statement.

Part IV

Item 15. Exhibits and Financial Statement Schedule

We have filed the following documents as part of this Annual Report on Form 10-K:

1. Financial Statements: See "Index to Consolidated Financial Statements" in Part II, Item 8 of this Annual Report on Form 10-K.
2. Financial Statement Schedule:
    a. Allowance for doubtful accounts: see Note 2, "Balance Sheet Details" in Part II, Item 8 of this Annual Report on Form 10-K.
    b. Deferred tax assets valuation allowance: see Note 13, "Income Taxes" in Part II, Item 8 of this Annual Report on Form 10-K.
3. Exhibits: See "Index to Exhibits" below.

Item 16. Form 10-K Summary

None.

Index to Exhibits

Exhibit No.		Description
2.01[a]	*	Quota Purchase Agreement, dated November 17, 2017, among registrant, AB Technologies LLC and DSM Produtos Nutricionais Brasil S.A.
2.02	*	Amendment No. 1, dated December 28, 2017, to the Quota Purchase Agreement, dated November 17, 2017, among registrant, AB Technologies LLC and DSM Produtos Nutricionais Brasil S.A.
2.03	*	Amendment No. 2, dated April 16, 2019, to the Quota Purchase Agreement, dated November 17, 2017, among registrant, AB Technologies LLC and DSM Produtos Nutricionais Brasil S.A.
2.04	*	Amendment No. 3, dated February 24, 2020, to the Quota Purchase Agreement, dated November 17, 2017, among registrant, AB Technologies LLC and DSM Produtos Nutricionais Brasil S.A.
2.05	*	Amendment No. 4, dated as of March 30, 2020, to the Quota Purchase Agreement, dated November 17, 2017, among registrant, AB Technologies LLC and DSM Produtos Nutricionais Brasil S.A.
2.06	*	Amendment No. 5, dated May 22, 2020, to the Quota Purchase Agreement, dated November 17, 2017, among registrant, AB Technologies LLC and DSM Produtos Nutricionais Brasil S.A.
2.07[b]	*	Equity Purchase Agreement, dated October 31, 2019, between registrant and Cosan US, Inc.
3.01	*	Restated Certificate of Incorporation
3.02	*	Certificate of Amendment, dated May 9, 2013, to Restated Certificate of Incorporation
3.03	*	Certificate of Amendment, dated May 12, 2014, to Restated Certificate of Incorporation
3.04	*	Certificate of Amendment, dated September 18, 2015, to Restated Certificate of Incorporation
3.05	*	Certificate of Amendment, dated May 18, 2016, to Restated Certificate of Incorporation
3.06	*	Certificate of Amendment, dated June 5, 2017, to Restated Certificate of Incorporation
3.07	*	Certificate of Amendment of the Restated Certificate of Incorporation dated May 29, 2020
3.08	*	Form of Certificate of Designation of Preferences, Rights and Limitations of Series D Convertible Preferred Stock (found at Exhibit E, herein)
3.09	*	Form of Certificate of Designation of Preferences, Rights and Limitations of Series E Convertible Preferred Stock
3.10	**	Restated Bylaws
4.01	*	Specimen of Common Stock Certificate
4.02	*	Form of certificate representing the Series D Convertible Preferred Stock
4.03	*	Warrant to Purchase Stock, dated December 23, 2011, issued to ATEL Ventures, Inc.
4.04[a]	*	Agreement, dated February 23, 2012, among registrant, Maxwell (Mauritius) Pte Ltd, Naxyris SA, Biolding Investment S.A., and Sualk Capital Ltd.
4.05	*	Exchange Agreement, dated July 26, 2015, between registrant and the investors listed therein
4.06	*	Letter Agreement dated as of July 29, 2015 among registrant and registrant's security holders listed therein
4.07	*	Warrant to Purchase Stock issued July 29, 2015 by registrant to Maxwell (Mauritius) Pte Ltd
4.08	*	Warrant to Purchase Stock issued July 29, 2015 by registrant to Maxwell (Mauritius) Pte Ltd
4.09	*	Note and Warrant Purchase Agreement, dated February 12, 2016, between registrant and the purchasers listed therein

Exhibit No.		Description
4.10	*	Securities Purchase Agreement, dated April 8, 2016, between registrant and Bill & Melinda Gates Foundation
4.11	*	Letter Agreement re Charitable Purposes and Use of Funds, dated April 8, 2016, between registrant and the Bill & Melinda Gates Foundation
4.12	*	Purchase Money Promissory Note issued December 19, 2016 by registrant to Nikko Chemicals Co. Ltd.
4.13	*	Form of Securities Purchase Agreement, dated May 8, 2017, between registrant and the other parties thereto
4.14	*	Amendment No. 1, dated May 30, 2017 to Securities Purchase Agreement, dated May 8, 2017, between registrant and the other parties thereto
4.15	*	Form of Common Stock Purchase Warrant (Cash Warrant) issued May 11, 2017 by registrant to the purchasers thereof (found at Exhibit C-1, herein)
4.16	*	Form of Common Stock Purchase Warrant (Dilution Warrant) issued May 11, 2017 by registrant to the purchasers thereof (found at Exhibit C-2, herein)
4.17	*	Stockholder Agreement, dated May 11, 2017, between registrant and DSM International B.V.
4.18	*	Common Stock Purchase Warrant (Cash Warrant), issued May 31, 2017, by registrant to the investor named therein
4.19	*	Securities Purchase Agreement, dated August 2, 2017, between registrant and DSM International B.V.
4.20	*	Securities Purchase Agreement, dated August 2, 2017, between registrant and affiliates of Vivo Capital LLC
4.21	*	Form of Stockholder Agreement, dated August 3, 2017, between registrant and affiliates of Vivo Capital LLC (found at Exhibit C, herein)
4.22	*	Form of Common Stock Purchase Warrant (Dilution Warrant) issued August 7, 2017 by registrant to DSM International B.V. (found at Exhibit B-2, herein)
4.23[a]	*	Amended and Restated Stockholder Agreement, dated August 7, 2017, between registrant and DSM International B.V.
4.24	*	Promissory Note issued October 20, 2017 by registrant to Ginkgo Bioworks, Inc.
4.25	*	Note issued December 28, 2017 by registrant to DSM Finance BV
4.26	*	Form of Common Stock Purchase Warrant issued April 26, April 29 or May 3, 2019 by registrant to certain accredited investors (found at Exhibit A, herein)
4.27	*	Common Stock Purchase Warrant issued May 10, 2019 by registrant to Silverback Opportunistic Credit Master Fund Limited
4.28	*	Common Stock Purchase Warrant issued August 14, 2019 by registrant to Naxyris S.A.
4.29	*	Form of Promissory Note issued September 10, 2019 by registrant to certain accredited investors (found at Exhibit A, herein)
4.30	*	Form of Senior Convertible Note due 2022 issued by Registrant to certain accredited investors
4.31	*	Form of Security Purchase Agreement, dated January 31, 2020, between registrant and certain investors
4.32	*	Form of Right to Purchase Shares of Common Stock issued January 31, 2020 by registrant to certain investors (found at Exhibit A, herein)
4.33	*	Form of Warrant Amendment Agreement, dated January 31, 2020, between registrant and certain investors

Exhibit No.		Description
4.34	*	Form of Warrant Amendment Agreement, dated January 31, 2020, between registrant and Foris Ventures, LLC
4.35	*	Form of Warrant Amendment Agreement, dated February 28, 2020, between registrant and certain investors
4.36	*	Form of Warrant Amendment Agreement, dated February 28, 2020, between registrant and certain investors
4.37	*	Senior Convertible Note Maturity Extension, dated March 11, 2020, between registrant and Total Raffinage Chimie
4.38	*	Senior Convertible Note Maturity Extension, dated April 6, 2020, between registrant and Total Raffinage Chimie
4.39	*	Promissory Note issued April 29, 2020 by registrant to Foris Ventures, LLC (found at Exhibit A, herein)
4.40	*	Form of Senior Convertible Note Amendment, dated May 1, 2020, between registrant and certain accredited investors
4.41	*	Warrant Amendment Agreement, dated May 1, 2020, between registrant and LMAP Kappa Limited
4.42	*	Warrant Amendment Agreement, dated May 1, 2020, between registrant and HT Investments MA LLC
4.43	*	Rights Amendment Agreement, dated May 1, 2020, between registrant and Silverback Opportunistic Credit Master Fund Limited
4.44	*	Senior Convertible Note Maturity Extension, dated May 7, 2020, between registrant and Total Raffinage Chimie
4.45	*	Amendment No. 1 to Amended and Restated Loan And Security Agreement, dated June 1, 2022, between registrant and Foris Ventures, LLC
4.46	*	Form of Security Purchase Agreement, dated June 1, 2020 or June 4, 2020, between registrant and certain accredited investors
4.47	*	Second Amendment to the Senior Convertible Notes and Waiver and Forbearance Agreement, dated June 4, 2020, between the registrant and HT Investments MA LLC
4.48	**	Form of Amendment to Warrants to Purchase Shares of Common Stock, dated October 23, 2020, between registrant and certain investors
4.49	**	Amendment to Rights Agreement, dated December 11, 2020, between registrant and Foris Ventures, LLC
4.50	**	Description of Registrant's Securities Registered Under Section 12 of the Exchange Act
10.01	*	Lease, dated August 22, 2007, between registrant and ES East Associates, LLC
10.02	*	First Amendment, dated March 10, 2008, to Lease, dated August 22, 2007, between registrant and ES East Associates, LLC
10.03	*	Second Amendment, dated April 25, 2008, to Lease, dated August 22, 2007, between registrant and ES East Associates, LLC
10.04	*	Third Amendment, dated July 31, 2008, to Lease, dated August 22, 2007, between registrant and ES East Associates, LLC
10.05	*	Fourth Amendment, dated November 14, 2009, to Lease, dated August 22, 2007, between registrant and ES East Associates, LLC
10.06	*	Fifth Amendment, dated October 15, 2010, to Lease, dated August 22, 2007, between registrant and ES East, LLC

Exhibit No.		Description
10.07	*	Sixth Amendment, dated April 30, 2013, to Lease, dated August 22, 2007, between registrant and ES East, LLC
10.08	*	Lease dated April 25, 2008 between registrant and EmeryStation Triangle, LLC
10.09	*	Letter, dated April 25, 2008, amending Lease between registrant and EmeryStation Triangle, LLC
10.10	*	Second Amendment, dated February 5, 2010, to Lease, dated April 25, 2008, between registrant and EmeryStation Triangle, LLC
10.11	*	Third Amendment, dated May 1, 2013, to Lease, dated April 25, 2008, between registrant and EmeryStation Triangle, LLC
10.12	*	Pilot Plant Expansion Right Letter dated December 22, 2008 between registrant and EmeryStation Triangle, LLC
10.13 [a c]	*	Lease Agreement, dated August 10, 2011, between Amyris Brasil Ltda. And Techno Park Empreendimentos e Administração Imobiliária Ltda.
10.14 [a c]	*	First Amendment, dated July 31, 2013, to Lease Agreement, dated August 10, 2011, between Amyris Brasil Ltda. And Techno Park Empreendimentos e Administração Imobiliária Ltda.
10.15 [c]	*	Second Amendment, dated October 31, 2015, to Lease Agreement, dated August 10, 2011, between Amyris Brasil Ltda. And Techno Park Empreendimentos e Administração Imobiliária Ltda.
10.16 [c]	*	Third Amendment, dated March 30, 2016, to Lease Agreement, dated August 10, 2011, between Amyris Brasil Ltda. And Techno Park Empreendimentos e Administração Imobiliária Ltda.
10.17 [c]	**	Fourth Amendment, dated May 7, 2019, to Lease Agreement, dated August 10, 2011, between Amyris Brasil Ltda. And Techno Park Empreendimentos e Administração Imobiliária Ltda.
10.18 [c]	*	Private Instrument of Non-Residential Real Estate Lease Agreement, dated March 31, 2008, between Lucio Tomasiello and Amyris Brasil S.A. (including Amendment No. 1, dated July 5, 2008, and Amendment No. 2, dated October 30, 2008)
10.19 [a c]	*	Third Amendment, dated October 1, 2012, to the Private Instrument of Non Residential Real Estate Lease Agreement, dated March 31, 2008, between Lucio Tomasiello and Amyris Brasil Ltda.
10.20 [a c]	*	Fourth Amendment, dated March 3, 2015, to the Private Instrument of Non-Residential Real Estate Lease Agreement, dated March 31, 2008, among Amyris Brasil Ltda., Lucius Tomasiello and Mauricio Tomasiello
10.21 [c]	*	Fifth Amendment, dated September 22, 2015, to the Private Instrument of Non-Residential Real Estate Lease Agreement, dated March 31, 2008, among Amyris Brasil Ltda., Lucius Tomasiello and Mauricio Tomasiello
10.22 [c]	*	Sixth Amendment, dated October 17, 2016, to the Private Instrument of Non-Residential Real Estate Lease Agreement, dated March 31, 2008, among Amyris Brasil Ltda., Lucius Tomasiello and Mauricio Tomasiello
10.23 [c]	*	Seventh Amendment, dated September 25, 2017, to the Private Instrument of Non-Residential Real Estate Lease Agreement, dated March 31, 2008, among Amyris Brasil Ltda., Lucius Tomasiello and Mauricio Tomasiello
10.24 [c]	*	Eight Amendment, dated December 9, 2019, to the Private Instrument of Non-Residential Real Estate Lease Agreement, dated March 31, 2008, among Amyris Brasil Ltda., Lucius Tomasiello and Mauricio Tomasiello
10.25 [c]	*	Lease Agreement, dated May 1, 2010, between São Martinho S.A. and SMA Indústria Química S.A.
10.26 [c]	*	Amendment No. 2, dated August 31, 2015, to the Lease Agreement, dated May 1, 2010, between São Martinho S.A. and SMA Indústria Química S.A.

Exhibit No.	Description
10.27 [c] *	Amendment No. 3, dated September 1, 2016, to the Lease Agreement, dated May 1, 2010, between São Martinho S.A. and SMA Indústria Química Ltda. (f.k.a. SMA Indústria Química S.A.)
10.28 [c] *	Amendment No. 4, dated December 26, 2017, to the Lease Agreement, dated May 1, 2010, between São Martinho S.A. and SMA Indústria Química Ltda. (f.k.a. SMA Indústria Química S.A.)
10.29 *	Lease Agreement, dated May 10, 2019, between Amyris Brotas Fermemtação de Performance Ltda. and Raízen Energia S.A.
10.30 [a] *	Partnership Agreement, dated October 20, 2017, between registrant and Ginkgo Bioworks, Inc.
10.31 *	Credit Agreement, dated December 28, 2017, between registrant and DSM Finance BV
10.32 [a] *	Joint Venture Agreement, dated December 6, 2016, among registrant, Nikko Chemicals Co. Ltd., and Nippon Surfactant Industries Co., Ltd.
10.33 [a] *	First Amended and Restated LLC Operating Agreement of Aprinnova, LLC (f/k/a Neossance, LLC) dated December 6, 2016
10.34 [b] *	Supply Agreement, dated December 28, 2017, between registrant and DSM Produtos Nutricionais Brasil S.A.
10.35 [b] *	Amendment No. 1, dated November 19, 2018, to Supply Agreement, dated December 28, 2017, between registrant and DSM Nutritional Products AG, as assignee of DSM Produtos Nutricionais Brasil S.A.
10.36 [b] *	Amendment No. 2, dated April 16, 2019, to Supply Agreement, dated December 28, 2017 between registrant and DSM Nutritional Products AG, as assignee of DSM Produtos Nutricionais Brasil S.A.
10.37 *	Amendment No. 3, dated October 3, 2019, to Supply Agreement, dated December 28, 2017, between registrant and DSM Nutritional Products AG, as assignee of DSM Produtos Nutricionais Brasil S.A.
10.38 [a] **	Amendment No. 4, dated December 18, 2020, to Supply Agreement, dated December 18, 2020, between registrant and DSM Nutritional Products AG, as assignee of DSM Produtos Nutricionais Brasil S.A.
10.39 *	Assignment Agreement, dated December 31, 2018, between registrant and Hangzhou Xinfu Science & Tech Co. Ltd
10.40 [b] *	Assignment and Assumption Agreement, dated April 16, 2019, among registrant, DSM Nutritional Products AG and DSM Nutritional Products Europe Ltd.
10.41 *	Exchange Agreement, dated May 10, 2019, among registrant and Silverback Asset Management, LLC
10.42 *	Loan and Security Agreement, dated August 14, 2019, among registrant, certain of registrant's subsidiaries and Naxyris S.A.
10.43 *	Form of Credit Agreement, dated September 10, 2019, between registrant and certain accredited investors
10.44 *	Credit Agreement, dated September 17, 2019, between registrant and DSM Finance B.V.
10.45 *	Credit and Security Agreement, dated November 14, 2019, by and among the Company, the Subsidiary Guarantors, Schottenfeld Opportunities Fund II, L.P. and Phase Five Partners, LP
10.46 *	Form of Exchange Agreement, dated December 30, 2019, by and between the Company and each of the Investors
10.47 *	Warrant Exercise and Debt Equitization Agreement, dated January 31, 2020, between registrant and Foris Ventures, LLC
10.48 *	Form of Waiver and Forbearance Agreement, dated February 18, 2020, between registrant and certain investors

Exhibit No.		Description
10.49	*	Waiver Agreement and Amendment to Partnership Agreement, dated March 11, 2020 by and between registrant and Ginkgo Bioworks, Inc.
10.50	*	Amendment to Loan Agreement, dated March 12, 2020, between registrant and Nikko Chemicals Co., Ltd.
10.51	*	Second Amendment to Loan Agreement, dated April 3, 2020, between registrant and Nikko Chemicals Co., Ltd.
10.52	*	Credit Agreement, dated April 29, 2020, between registrant and Foris Ventures, LLC
10.53	*	Waiver Agreement and Amendment to Partnership Agreement, dated May 6, 2020 by and between registrant and Ginkgo Bioworks, Inc.
10.54	*	Third Amendment to Loan Agreement, dated May 7, 2020, between registrant and Nikko Chemicals Co., Ltd.
10.55	*	Promissory Note dated May 7, 2020, between registrant and Bank of the West
10.56	*	Second Amendment to Promissory Note and Partnership Agreement, dated August 10, 2020, between registrant and Ginkgo Bioworks, Inc.
10.57 [a]	**	Farnesene Framework Agreement, dated December 18, 2020, between registrant and DSM Nutritional Products Ltd.
10.58	*†	Offer Letter dated September 27, 2006 between registrant and John Melo
10.59	*†	Amendment, dated December 18, 2008, to Offer Letter, dated September 27, 2006, between registrant and John Melo
10.60	*†	Performance Stock Option Award Agreement, dated May 29, 2018, between the registrant and John Melo
10.61	*†	Amendment #1, dated May 30, 2018, to Executive Severance Plan Participation Agreement, dated December 18, 2013, between the registrant and John Melo
10.62	*†	Offer Letter, dated June 5, 2017, between registrant and Nicole Kelsey
10.63	*†	Amendment, dated September 18, 2017, to Offer Letter, dated June 5, 2017, between registrant and Nicole Kelsey
10.64	*†	Offer Letter, dated October 5, 2017, between registrant and Eduardo Alvarez
10.65	**†	Offer Letter, dated February 6, 2020, between registrant and Han Kieftenbeld
10.66	*†	2010 Equity Incentive Plan, as amended on May 22, 2018, and forms of award agreements thereunder
10.67	*†	2010 Employee Stock Purchase Plan, as amended on May 22, 2018, and form of subscription agreement thereunder
10.68	*†	2020 Equity Incentive Plan
10.69	*†	Form of Restricted Stock Unit Agreement for 2020 Equity Incentive Plan
10.70	*†	Form of Stock Option Agreement for 2020 Equity Incentive Plan
10.71	*†	Executive Severance Plan, effective November 6, 2013
10.72	*†	Compensation arrangements between registrant and its non-employee directors
10.73	*†	Compensation arrangements between registrant and its executive officers
10.74	*†	Form of Indemnity Agreement between registrant and its directors and executive officers
21.01	**	List of subsidiaries

Exhibit No.		Description
23.01	**	Consent of Macias Gini & O'Connell LLP, independent registered public accounting firm
24.01	**	Power of Attorney (included on signature page to this Form 10-K)
31.01	**	Certification of Chief Executive Officer pursuant to Securities Exchange Act Rules 13a-14(c) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
31.02	**	Certification of Chief Financial Officer pursuant to Securities Exchange Act Rules 13a-14(c) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
32.01	***	Certification of Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
32.02	***	Certification of Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
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 Label Linkbase Document
101.PRE	**	XBRL Taxonomy Extension Presentation Linkbase Document
104		Cover Page Interactive Data File (embedded within the Inline XBRL document)

a Portions of this exhibit, which have been granted confidential treatment by the Securities and Exchange Commission, have been omitted.
b Portions of this exhibit have been omitted pursuant to Item 601(b)(10)(iv) of Regulation S-K promulgated under the Exchange Act.
c Translation to English from Portuguese in accordance with Rule 12b-12(d) of the regulations promulgated by the Securities and Exchange Commission under the Exchange Act.
† Management contract or compensatory plan or arrangement.
* Incorporated by reference as an exhibit to this Report.
** Filed with this Report.
*** Furnished with this Report

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.

AMYRIS, INC.

By: /s/ John G. Melo

John G. Melo
President and Chief Executive Officer
March 5, 2021

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints John G. Melo and Han Kieftenbeld, and each of them, as his or her true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution, for him or her and in his or her name, place and stead, in any and all capacities, to sign any and all amendments to this Annual Report on Form 10-K, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the U.S. Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming that all said attorneys-in-fact and agents, or any of them or their or his or her substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, this Annual Report on Form 10-K has been signed by the following persons on behalf of the registrant, in the capacities and on the dates indicated.

Signature	Title	Date
/s/ John G. Melo John G. Melo	Director, President and Chief Executive Officer (Principal Executive Officer)	March 5, 2021
/s/ Han Kieftenbeld Han Kieftenbeld	Chief Financial Officer (Principal Financial Officer)	March 5, 2021
/s/ Anthony Hughes Anthony Hughes	Chief Accounting Officer (Principal Accounting Officer)	March 5, 2021
/s/ John Doerr John Doerr	Director	March 5, 2021
/s/ Geoffrey Duyk Geoffrey Duyk	Director	March 5, 2021
/s/ Philip Eykerman Philip Eykerman	Director	March 5, 2021
/s/ Christoph Goppelsroeder Christoph Goppelsroeder	Director	March 5, 2021
/s/ Frank Kung Frank Kung	Director	March 5, 2021
/s/ James McCann James McCann	Director	March 5, 2021
/s/ Steve Mills Steve Mills	Director	March 5, 2021
/s/ Carole Piwnica Carole Piwnica	Director	March 5, 2021
/s/ Lisa Qi Lisa Qi	Director	March 5, 2021
/s/ Julie Washington Julie Washington	Director	March 5, 2021
/s/ Patrick Yang Patrick Yang	Director	March 5, 2021

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Core Values

Innovation

We continuously solve unsolved needs. We are driven to accomplish the seemingly impossible. We embrace intelligent risk and are a learning organization.

Make good things.

Collaboration

We work with each other, our partners and our customers to achieve exceptional results. We value, respect and learn from each other as we strive for mutual success.

Make good together.

Amyrous

We love what we do and love what we make. We are passionate about having a positive impact. We have fun, keep a sense of humor and enjoy working together.

Make good impact.

Safety

We demonstrate a deep regard for the safety and well-being of our people, our communities, our resources and our planet. We speak up courageously.

Make good processes.

Integrity

We are honest, fair and ethical. We hold ourselves accountable and deliver on our commitments. We do what we say.

Make good choices.