DYNAVAX

2022 PROXY STATEMENT
& 2021 ANNUAL REPORT

DYNAVAX TECHNOLOGIES CORPORATION

2100 Powell Street, Suite 900
Emeryville, California 94608

NOTICE OF 2022 ANNUAL MEETING OF STOCKHOLDERS
To Be Held On May 26, 2022

Dear Stockholder:

You are cordially invited to attend the 2022 Annual Meeting of Stockholders (the ''Annual Meeting'') of Dynavax Technologies Corporation, a Delaware corporation (the ''Company''). The Annual Meeting will be held virtually on May 26, 2022, at 9:00 a.m. Pacific Time at www.virtualshareholdermeeting.com/DVAX2022. **The Annual Meeting will be held online only and you will not be able to attend the Annual Meeting in person**. You will be able to vote your shares electronically by Internet or by phone and submit questions online during the Annual Meeting by logging in to the website listed above using the 16-digit control number included in your Notice of Internet Availability of Proxy Materials, on your proxy card or on the instructions that accompanied our proxy materials. Online check-in will begin at 8:45 a.m. Pacific Time and should allow ample time for the check-in procedures. The Annual Meeting is being convened for the following purposes:

1. To elect our five nominees for Class I directors to hold office until the 2025 Annual Meeting of Stockholders or until their respective successors are duly elected and qualified.
2. To approve the amendment and restatement of the Dynavax Technologies Corporation 2018 Equity Incentive Plan to, among other things, increase the aggregate number of shares of common stock authorized for issuance under the plan by 15,000,000.
3. To approve, on an advisory basis, the compensation of the Company's named executive officers, as disclosed in the proxy statement accompanying this Notice.
4. To ratify the selection of Ernst & Young LLP as the independent registered public accounting firm of the Company for its fiscal year ending December 31, 2022.

In addition, you will also be asked to conduct other business, if any, as may properly come before the Annual Meeting or any adjournment thereof.

These items of business are more fully described in the accompanying proxy statement.

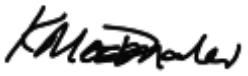
The record date for the Annual Meeting is April 4, 2022 (the ''Record Date''). Only stockholders of record at the close of business on that date may vote at the meeting or any adjournment thereof.

Important Notice Regarding the Availability of Proxy Materials for the 2022 Annual Meeting of Stockholders to Be Held Virtually at 9:00 a.m., Pacific Time, on May 26, 2022 at www.virtualshareholdermeeting.com/DVAX2022.

The Proxy Statement and Annual Report to Stockholders for the year ended December 31, 2021 are available at www.proxyvote.com.

The Board of Directors recommends that you vote FOR the proposals identified above.

By Order of the Board of Directors



Kelly MacDonald
Chief Financial Officer

Emeryville, California
April 14, 2022

Your vote is very important, regardless of the number of shares you own. Whether or not you expect to attend the virtual Annual Meeting, please complete, date, sign and return the proxy mailed to you, or vote over the Internet or by phone as instructed in these materials, as promptly as possible in order to ensure your representation at the Annual Meeting. Even if you have voted by proxy card or over the Internet or by phone, you may still vote electronically during the Annual Meeting.

[THIS PAGE INTENTIONALLY LEFT BLANK]

DYNAVAX TECHNOLOGIES CORPORATION
2100 Powell Street, Suite 900
Emeryville, California 94608

PROXY STATEMENT
FOR THE 2022 ANNUAL MEETING OF STOCKHOLDERS
To be Held on May 26, 2022

QUESTIONS AND ANSWERS ABOUT THESE PROXY MATERIALS AND VOTING

Why did I receive a notice regarding the availability of proxy materials on the Internet?

We have sent you the proxy notice because the Board of Directors (the ''Board'') of Dynavax Technologies Corporation (the ''Company,'' ''Dynavax,'' ''we'' or ''us'') is soliciting your proxy to vote at the 2022 Annual Meeting of Stockholders (the ''Annual Meeting'').

In accordance with the rules adopted by the Securities and Exchange Commission (the ''SEC''), instead of mailing a printed copy of our proxy materials, including our annual report, we have decided to provide access to these materials via the Internet. Accordingly, on or about April 14, 2022, we will begin mailing a Notice Regarding Internet Availability of Proxy Materials (the ''Notice''), to stockholders of record as of April 4, 2022 (the ''Record Date''), and will have posted our proxy materials on the website referenced in the Notice (www.proxyvote.com). As more fully described in the Notice, all stockholders may choose to access our proxy materials on that website, and any stockholder may request a printed set of such materials as follows:

- by telephone: call 1-800-579-1639 free of charge and follow the instructions;
- by Internet: go to www.proxyvote.com and follow the instructions; or
- by e-mail: send an e-mail message to sendmaterial@proxyvote.com. Please send a blank e-mail and insert the 16-Digit Control Number located in your Notice in the subject line.

Please note that you do not need to attend the Annual Meeting to vote your shares. Instead, you may vote before the Annual Meeting by Internet, by phone or by proxy using a proxy card that you may request or that we may elect to deliver at a later time.

Will I receive any proxy materials by mail other than the Notice?

No, you will not receive any other proxy materials by mail unless you request a paper copy of the proxy materials.

How do I attend the Annual Meeting?

The Annual Meeting will be held virtually on May 26, 2022 at 9:00 a.m. Pacific Time at www.virtualshareholdermeeting.com/DVAX2022. The Annual Meeting will be held online only. During the meeting, you will be able to vote your shares electronically by Internet and submit questions online by logging in to the website listed above using the 16-digit control number included in the Notice, or you may vote before the meeting by using a proxy card that you may request or that we may elect to deliver at a later time. You may also vote by phone before the meeting by calling 1-800-690-6903. Online check-in for the Annual Meeting will begin at 8:45 a.m. Pacific Time and you should allow ample time for the check-in procedures. You may submit questions during the meeting by visiting www.virtualshareholdermeeting.com/DVAX2022. We will respond to as many appropriate inquiries at the Annual Meeting as time allows.

You may vote your shares electronically before the meeting by Internet, by phone or by proxy using a proxy card that you may request or that we may elect to deliver at a later time, and you do not need to access the virtual Annual Meeting to vote if you submitted your vote via Internet, phone or proxy card in advance of the Annual Meeting.

Who can vote at the Annual Meeting?

Only stockholders of record at the close of business on the Record Date will be entitled to vote at the Annual Meeting. On the Record Date, there were 126,311,669 shares of common stock outstanding and entitled to vote. A list of our stockholders of record will be open for examination by any stockholder beginning ten days

prior to the Annual Meeting at our headquarters located at 2100 Powell Street, Suite 900, Emeryville, California 94608. If you would like to view the list, please contact our Corporate Secretary to schedule an appointment by calling (510) 848-5100 or writing to him at the address above. In addition, the list will be available for inspection by stockholders on the virtual meeting website during the Annual Meeting.

Stockholder of Record: Shares Registered in Your Name

If, on the Record Date, your shares were registered directly in your name with our transfer agent, Computershare, then you are a stockholder of record. As a stockholder of record, you may vote by Internet before or during the Annual Meeting, or before the Annual Meeting by using a proxy card that you may request or that we may elect to deliver at a later time. You may also vote by phone before the meeting by calling 1-800-690-6903. Whether or not you plan to attend, we urge you to fill out and return the proxy card or vote by Internet or by phone before the Annual Meeting to ensure your vote is counted.

Beneficial Owner: Shares Registered in the Name of a Broker or Bank

If, on the Record Date, your shares were not held in your name, but rather in an account at a brokerage firm, bank, dealer or other similar organization, then you are the beneficial owner of shares held in ''street name'' and the Notice is being forwarded to you by that organization. Simply follow the voting instructions in such notice to ensure that your vote is counted. The organization holding your account is considered to be the stockholder of record for purposes of voting at the Annual Meeting. As a beneficial owner, you have the right to direct your broker or other agent regarding how to vote the shares in your account. You are also invited to attend the Annual Meeting. To vote live at the Annual Meeting, follow the instructions after logging into the meeting website.

What am I voting on?

We are asking you to vote on four proposals:

1. To elect our five nominees for Class I directors to hold office until the 2025 Annual Meeting of Stockholders or until their respective successors are duly elected and qualified.
2. To approve the amendment and restatement of the Dynavax Technologies Corporation 2018 Equity Incentive Plan to, among other things, increase the aggregate number of shares of common stock authorized for issuance under the plan by 15,000,000.
3. To approve, on an advisory basis, the compensation of the Company's named executive officers, as disclosed in the proxy statement accompanying this Notice.
4. To ratify the selection of Ernst & Young LLP as the independent registered public accounting firm of the Company for its fiscal year ending December 31, 2022.

In addition, you will also be asked to conduct other business, if any, as may properly come before the Annual Meeting or any adjournment thereof.

What is the Board's recommendation?

The Board recommends that you vote ''For'' each of the four proposals.

What if another matter is properly brought before the Annual Meeting?

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 Annual Meeting, it is the intention of the persons named in the accompanying proxy to vote on those matters in accordance with her or his best judgment.

How do I vote?

You may either vote ''For'' all the nominees to the Board or you may ''Withhold'' your vote for any nominee you specify. For each of the other matters to be voted on, you may vote ''For'' or ''Against'' or abstain from voting. The procedures for voting are fairly simple:

Stockholder of Record: Shares Registered in Your Name

If you are a stockholder of record, you may vote by Internet before or during the Annual Meeting, by phone before the Annual Meeting or by proxy before the Annual Meeting using a proxy card that you may request or that we may elect to deliver at a later time. Whether or not you plan to attend the Annual Meeting, we urge you to vote to ensure your vote is counted.

- To vote using the proxy card, simply complete, sign and date the proxy card that may be delivered and return it promptly in the envelope provided. If you return your signed proxy card to us before the Annual Meeting, we will vote your shares as you direct.
- To vote by phone, call 1-800-690-6903 free of charge and follow the recorded instructions. You will be asked to provide the control number from the Notice. Your telephone vote must be received by 11:59 p.m., Eastern Time on May 25, 2022 to be counted.
- To vote through the Internet before the meeting, go to www.proxyvote.com and follow the on-screen instructions to complete an electronic proxy card. You will be asked to provide the control number from the Notice. Your Internet vote must be received by 11:59 p.m., Eastern Time on May 25, 2022 to be counted.
- To vote through the Internet during the meeting, please visit www.virtualshareholdermeeting.com/DVAX2022 and have available the 16-digit control number included in your Notice.

Beneficial Owner: Shares Registered in the Name of Broker or Bank

If you are a beneficial owner of shares registered in the name of your broker or other agent, you should have received a notice containing voting instructions from that organization rather than from Dynavax. Simply follow the voting instructions in such notice to ensure that your vote is counted. To vote live at the Annual Meeting, follow the instructions after logging into the meeting website.

How many votes do I have?

On each matter to be voted upon, you have one vote for each share of common stock you own as of the Record Date.

What happens if I do not vote?

Stockholder of Record: Shares Registered in Your Name

If you are a stockholder of record and do not vote before the Annual Meeting by phone or by using a proxy card that you may request or that we may elect to deliver at a later time, or through the Internet before or at the Annual Meeting, your shares will not be voted.

Beneficial Owner: Shares Registered in the Name of Broker or Bank

If you are a beneficial owner and do not instruct your broker, bank, or other agent how to vote your shares, the question of whether your broker or nominee will still be able to vote your shares depends on whether the applicable stock exchange deems the particular proposal to be a ‘‘routine’’ matter. Brokers and nominees can use their discretion to vote ‘‘uninstructed’’ shares with respect to matters that are considered to be ‘‘routine,’’ but not with respect to ‘‘non-routine’’ matters. Under the rules and interpretations of the New York Stock Exchange, ‘‘non-routine’’ matters are matters that may substantially affect the rights or privileges of stockholders, such as mergers, stockholder proposals, elections of directors (even if not contested), executive compensation (including any advisory stockholder votes on executive compensation and on the frequency of stockholder votes on executive compensation), and certain corporate governance proposals, even if management-supported. Accordingly, your broker or nominee may not vote your shares on Proposals 1, 2 or 3 without your instructions, but may vote your shares on Proposal 4.

What if I return a proxy card but do not make specific choices?

If you return a signed and dated proxy card or otherwise vote without marking any voting selections, your shares will be voted:

- **Proposal 1**: ''For'' election of our five nominees as Class I directors;
- **Proposal 2**: ''For'' approval of the amendment and restatement of the Dynavax Technologies Corporation 2018 Equity Incentive Plan to, among other things, increase the aggregate number of shares of common stock authorized for issuance under the plan by 15,000,000;
- **Proposal 3**: ''For'' advisory approval of executive compensation; and
- **Proposal 4**: ''For'' ratification of the selection of Ernst & Young LLP as the independent registered public accounting firm of the Company for its fiscal year ending December 31, 2022.

If any other matter is properly presented at the Annual Meeting or any adjournment(s) thereof, your proxyholder (one of the individuals named on your proxy card) will vote your shares at his or her discretion.

Who is paying for this proxy solicitation?

We will pay for the entire cost of soliciting proxies. In addition to these proxy materials, our directors and employees may also solicit proxies in person, by telephone, or by other means of communication. Directors and employees will not be paid any additional compensation for soliciting proxies. We may also reimburse brokerage firms, banks and other agents for the cost of forwarding proxy materials to beneficial owners. Furthermore, we have retained the services of Alliance Advisors, LLC in connection with stockholder outreach efforts discussed in this proxy statement, for which we estimate that we will pay a fee not to exceed $22,000, plus out-of-pocket expenses.

What does it mean if I receive more than one Notice?

If you receive more than one Notice, your shares may be registered in more than one name or are registered in different accounts. Please follow the voting instructions on each of the Notices to ensure that all of your shares are voted.

Can I change my vote after submitting my proxy?

Stockholder of Record: Shares Registered in Your Name

Yes. You can revoke your proxy at any time before the final vote at the meeting. If you are the record holder of your shares, you may revoke your proxy in any one of the following ways:

- You may submit another properly completed proxy card with a later date.
- You may submit a later-dated vote by telephone by calling 1-800-690-6903. You will need the 16-digit control number included on your Notice or your proxy card (if you received a printed copy of the proxy materials). Votes submitted by telephone must be received by 11:59 p.m., Eastern Time on May 25, 2022 to be counted.
- You may grant a subsequent proxy through the Internet. You will need the 16-digit control number included on your Notice or your proxy card (if you received a printed copy of the proxy materials).
- You may send a timely written notice that you are revoking your proxy to Dynavax Technologies Corporation, Attention: Corporate Secretary, 2100 Powell Street, Suite 900, Emeryville, California 94608.
- You may virtually attend the Annual Meeting and vote by Internet by visiting www.virtualshareholdermeeting.com/DVAX2022. To attend the Annual Meeting, you will need the 16-digit control number included in your Notice, on your proxy card or on the instructions that accompanied your proxy materials. Simply attending the meeting will not, by itself, revoke your proxy.

Your most current proxy card or telephone vote or Internet proxy is the one that is counted.

Beneficial Owner: Shares Registered in the Name of Broker or Agent

If your shares are held by your broker or bank as a nominee or agent, you should follow the instructions provided by your broker or bank.

When are stockholder proposals due for next year's annual meeting?

To be considered for inclusion in next year's proxy materials, your proposal must be submitted in writing by December 15, 2022 to Dynavax Technologies Corporation, Attention: Corporate Secretary, 2100 Powell Street, Suite 900, Emeryville, California 94608. However, if our 2023 Annual Meeting of Stockholders is not held between April 26, 2023 and June 25, 2023, then the deadline will be a reasonable time before we begin to print and send our proxy materials. If you wish to submit a proposal (including a director nomination) that is not to be included in next year's proxy materials, you must do so no later than the close of business on February 25, 2023, and no earlier than the close of business on January 26, 2023. However, if our 2023 Annual Meeting of Stockholders is not held between April 26, 2023 and June 25, 2023, then you must submit your proposal (or director nomination) not earlier than the close of business on the 120th day prior to such annual meeting and not later than the close of business on the 90th day prior to such annual meeting or the 10th day following the day on which public announcement of the date of such meeting is first made.

How many votes are needed to approve each proposal?

- **Proposal 1**: to elect our five nominees for Class I directors, the five nominees receiving the most ''For'' votes from the holders of shares present (either in person or represented by proxy) and cast for the election of directors will be elected. Only votes ''For'' will affect the outcome of the vote; ''Withhold'' votes will have no effect on the outcome of the vote. However, if a nominee receives a greater number of ''Withhold'' votes than ''For'' votes, such nominee will submit his or her offer of resignation for consideration by our Nominating and Corporate Governance Committee in accordance with our Majority Vote Policy discussed in more detail in the section entitled ''Corporate Governance – Majority Vote Policy'' in this proxy statement.
- **Proposal 2**: to approve an amendment and restatement of the 2018 Equity Incentive Plan to, among other things, increase the aggregate number of shares of common stock authorized for issuance under the 2018 Equity Incentive Plan by 15,000,000, such amendment and restatement must receive ''For'' votes from the holders of a majority of shares present (either in person or by proxy) and entitled to vote on the matter at the meeting. If you return your proxy and select ''Abstain,'' it will have the same effect as an ''Against'' vote. Broker non-votes will have no effect.
- **Proposal 3**: to approve, on an advisory basis, the 2021 compensation of the Company's named executive officers, such advisory approval must receive ''For'' votes from the holders of a majority of shares present (either in person or by proxy) and entitled to vote on the matter at the meeting. If you return your proxy and select ''Abstain'' from voting, it will have the same effect as an ''Against'' vote. Broker non-votes will have no effect.
- **Proposal 4**: to ratify the selection of Ernst & Young LLP as the Company's independent registered public accounting firm for our fiscal year ending December 31, 2022, such ratification must receive ''For'' votes from the holders of a majority of shares present (either in person or by proxy) and entitled to vote on the matter at the meeting. If you return your proxy and select ''Abstain'' from voting, it will have the same effect as an ''Against'' vote. Broker non-votes will have no effect. However, as Proposal 4 is considered a ''routine'' matter, we do not expect to receive any broker non-votes.

What is the quorum requirement?

A quorum of stockholders is necessary to hold a valid Annual Meeting. A quorum will be present if stockholders holding at least a majority of the outstanding shares entitled to vote are present at the Annual Meeting in person or represented by proxy. On the Record Date, there were 126,311,669 shares outstanding and entitled to vote.

Your shares will be counted towards the quorum only if you submit a valid proxy (or one is submitted on your behalf by your broker, bank or other nominee) or if you vote at the Annual Meeting. Abstentions and broker

non-votes will be counted towards the quorum requirement. If there is no quorum, the holders of a majority of shares present at the Annual Meeting in person or represented by proxy may adjourn the Annual Meeting to another date.

How can I find out the results of the voting at the Annual Meeting?

Preliminary voting results will be announced at the Annual Meeting. Final voting results will be published in a current report on Form 8-K within four business days following the voting. If we are unable to obtain final results in that time, we will announce the preliminary results and subsequently file a second current report on Form 8-K with the final results.

What proxy materials are available on the Internet?

The 2022 proxy statement and 2021 Annual Report on Form 10-K are available at http://investors.dynavax.com/annuals-proxies.cfm.

PROPOSAL 1

ELECTION OF DIRECTORS

Our Board is divided into three classes, and each class has a three-year term. Vacancies on the Board may be filled only by persons elected by a majority of the remaining directors. A director elected by the Board to fill a vacancy in a class, including vacancies created by an increase in the number of directors, shall serve for the remainder of the full term of that class and until the director's successor is elected and qualified.

Our Board presently has eleven members. There are five Class I directors whose term of office expires in 2022: Julie Eastland, Andrew Hack, M.D., Ph.D., Brent MacGregor, Scott Myers and Elaine Sun, each of whom is a nominee for director and currently a director of the Company. Dr. Hack was nominated by our Nominating and Corporate Governance Committee and appointed to our Board in 2019, Ms. Eastland and Mr. MacGregor were nominated by our Nominating and Corporate Governance Committee and appointed to our Board in 2020, and Ms. Sun and Mr. Myers were nominated by our Nominating and Corporate Governance Committee and appointed to our Board in 2021, and this will be the first time each of them has stood for election. If each nominee is elected at the Annual Meeting, each of these nominees will serve until the 2025 Annual Meeting and until his or her successor is elected and has qualified, or, if sooner, until the director's death, resignation or removal. We have a policy encouraging our directors' attendance at our annual meetings. There were eight out of nine then-serving directors in attendance at our 2021 Annual Meeting.

Vote Required

Directors are elected by a plurality of the votes of the holders of shares present in person or represented by proxy and entitled to vote on the election of directors. The five nominees receiving the highest number of affirmative votes will be elected. Shares represented by executed proxies will be voted, if authority to do so is not withheld, for the election of the nominees named herein. Although the election of directors at the Annual Meeting is uncontested and directors are elected by a plurality of votes cast, and we therefore anticipate that each of the named nominees for director will be elected at the Annual Meeting, under our Corporate Governance Guidelines, any nominee for director is required to submit an offer of resignation for consideration by the Nominating and Corporate Governance Committee if such nominee for director (in an uncontested election) receives a greater number of ''Withhold'' votes than ''For'' votes. In such case, the Nominating and Corporate Governance Committee will then consider all the relevant facts and circumstances and recommend to the Board the action to be taken with respect to such offer of resignation. For more information on this policy see the section entitled ''Corporate Governance – Majority Vote Policy.'' If any nominee becomes unavailable for election as a result of an unexpected occurrence, your shares will be voted for the election of a substitute nominee proposed by our Board. Each person nominated for election has agreed to serve if elected. Our Board has no reason to believe that any nominee will be unable to serve.

Set forth below is certain biographical information as of April 4, 2022, regarding the experience, qualifications, attributes or skills that led our Nominating and Corporate Governance Committee to believe that each director or nominee should serve on the Board. There are no family relationships among any of our executive officers or directors.

Name	Age	Position
Julie Eastland	57	Director
Andrew Hack, M.D., Ph.D.	48	Director
Brent MacGregor	58	Director
Scott Myers	56	Director
Elaine Sun	51	Director

CLASS I DIRECTOR NOMINEES

Julie Eastland

Ms. Eastland has been a member of our Board since July 2020. Ms. Eastland has served as Chief Executive Officer of Harpoon Therapeutics, a publicly traded oncology company, since November 2021. Prior to Harpoon, Ms. Eastland served as Chief Operating Officer and Chief Financial Officer of ReCode Therapeutics, a privately-held genetics medicine company focused on delivery of novel, anti-viral lipid nanoparticles therapeutics

for respiratory diseases, from October 2020 to November 2021. Prior to ReCode, Ms. Eastland served as Chief Financial Officer and Chief Business Officer of Rainier Therapeutics, a private biopharmaceutical company focused on FGFR3 bladder cancer, from September 2018 to January 2020. Prior to Rainier, she served as Chief Financial Officer and Chief Business Officer of Cascadian Therapeutics, a publicly traded company, from 2010 to March 2018. While at Cascadian, Ms. Eastland was instrumental in the negotiation and sale of the company to Seattle Genetics, primarily for tucatinib, a HER2 targeted breast cancer therapy now marketed as Tukysa. Prior to Cascadian, Ms. Eastland served as Chief Financial Officer and Vice President of Finance and Operations of VLST Corporation from 2006 to 2010, a privately-held biotechnology company, and held various financial and strategic management positions at publicly traded biotechnology companies including Dendreon and Amgen. Ms. Eastland received an M.B.A. from Edinburgh University Management School and a B.S. in finance from Colorado State University. She also serves on the boards of Harpoon Therapeutics and Graybug Vision. We believe that Ms. Eastland's experience as a financial executive in the biopharmaceutical industry qualifies her to serve on our Board.

Andrew Hack, M.D., Ph.D.

Dr. Hack has been a member of our Board since August 2019. Since March 2019, Dr. Hack has served as a Managing Director of Bain Capital Life Sciences, LP, a private equity fund that invests in biopharmaceutical, specialty pharmaceutical, medical device, diagnostics, and enabling life science technology companies globally, and since August 2020 has served as Chief Financial Officer of BCLS Acquisition Corp., a special purpose acquisition company sponsored by an affiliate of Bain Capital Life Sciences, LP. From July 2015 to March 2019, he was Chief Financial Officer of Editas Medicine, Inc., where he had responsibility for finance, investor relations, business development, information technology, and operations. Previously, Dr. Hack served as a portfolio manager at Millennium Management, where he ran a market-neutral healthcare hedge fund focused on biotechnology, pharmaceutical, medical device and diagnostics, and life science tools companies from 2011 to 2015. Earlier in his investment career, he was a securities analyst at a number of healthcare-focused hedge funds and investment banks in New York. Prior to this, he was Director of Life Sciences at Reify Corporation, a life science tools and drug discovery company. Dr. Hack currently serves on the boards of directors of BCLS Acquisition Corporation, Mersana Therapeutics, Inc. and Nuvalent, Inc. He previously served on the boards of directors of Atea Pharmaceuticals, Inc. and Allena Pharmaceuticals, Inc. Dr. Hack received an M.D. and Ph.D. in Molecular Genetics and Cell biology from the University of Chicago, where he was named an inaugural Frank Family Scholar and received awards from the American Heart Association and American Society for Cell Biology. Dr. Hack received an M.D. and Ph.D. in Molecular Genetics and Cell Biology from the University of Chicago, as well as an A.B. in Biology with Special Honors. Serving as a director for other publicly-held biopharmaceutical companies provides Dr. Hack with alternate viewpoints on business strategy and board decision-making, which we believe enhances his contributions to our Board. Dr. Hack has demonstrated his ability to dedicate sufficient time and focus on his duties as a member of our Board and attended 100% of our Board and committee meetings in 2021. In accordance with our Board's standard practice, Dr. Hack reviews scheduled Board and committee meeting dates a year in advance to confirm availability to participate and attend all our Board and committee meetings. Accordingly, we believe Dr. Hack's financial background and extensive and diverse experience in the life sciences industry qualify him to serve on our Board.

Brent MacGregor

Mr. MacGregor has been a member of our Board since July 2020. Since November 2020, Mr. MacGregor has served as the CEO of Medical Developments International Ltd., an Australian-based company with marketed products in pain management, and respiratory ailments. He previously served as Senior Vice-President, Global Commercial Operations at Seqirus, a CSL Limited company, from January 2016 to June 2020. At Seqirus, Mr. MacGregor led a global team of 280 people in sales, marketing, commercial development, public policy and business development for a portfolio of seasonal influenza vaccines, an intra venous anti-viral product, a suite of in-licensed vaccines and pharmaceutical products, and a pandemic and pre-pandemic business. Prior to Seqirus, Mr. MacGregor was President and Global Head of Novartis Influenza Vaccines from January 2015 to January 2016, where he led integrated global operations of its influenza portfolio, through its acquisition by CSL Ltd, as well as serving in other roles with Novartis Vaccines from 2012 to 2014. Mr. MacGregor held several roles while at Sanofi Pasteur where he spent 17 years with his final role as President, Sanofi Pasteur KK, Tokyo,

Japan. Mr. MacGregor received an M.B.A. from Northwestern University, Kellogg School of Management, a Master of Arts from University of Reading, Reading, England and a Bachelor of Arts from Carleton University, Ottawa, Canada. We believe that Mr. MacGregor's experience as a vaccine executive qualifies him to serve on our Board.

Scott Myers

Mr. Myers has been the Chairperson of our Board since October 2021. Previously, he was the Chief Executive Officer and served on the board of directors of AMAG Pharmaceuticals, Inc. from April 2020 to November 2020, where he led its turnaround and strategic exit to Covis Pharma, S.à.r.l., a specialty pharmaceutical company, in November 2020. Mr. Myers has served as chairman of the board of directors of Rainier Therapeutics, Inc., an oncology biotechnology company focused on late-stage bladder cancer, from June 2018 to January 2020, and served as its Chief Executive Officer from September 2018 to January 2020. Mr. Myers led Rainier's asset sale of vofatamab to Fusion Pharmaceuticals Inc. Prior to Rainier, Mr. Myers served as Chief Executive Officer, President and Director for Cascadian Therapeutics, Inc., an oncology company, from April 2016 through its acquisition by Seattle Genetics in March 2018. Mr. Myers is an independent director of Selecta Biosciences, a gene therapy-rare disease company. He is a non-executive chairman of the board of directors of Harpoon Therapeutics, Inc., an oncology company. Mr. Myers holds a B.A. in Biology from Northwestern University and an M.B.A. from the Graduate School of Business at the University of Chicago (Booth). We believe Mr. Myers extensive experience as a life sciences executive qualify him to serve on our Board.

Elaine Sun

Ms. Sun has been a member of our Board since December 2021. Since March 2022, Ms. Sun has served as the CFO and COO of Mammoth Biosciences, Inc. She previously served as Senior Vice President and Chief Financial Officer of Halozyme Therapeutics, Inc., from March 2020 to February 2022. Prior to joining Halozyme, from January 2017 to December 2019, Ms. Sun served in senior management positions at SutroVax, Inc. (now known as Vaxcyte, Inc.), a life sciences company specializing in developing novel vaccines, most recently serving as Chief Financial Officer and Chief Strategy Officer. From 2013 to December 2016, Ms. Sun was an independent financial advisory consultant for private and public healthcare companies. Previously, Ms. Sun served as Managing Director and Head of West Coast Healthcare at Evercore Partners, a leading independent investment banking advisory firm, where she led Evercore's U.S. life sciences efforts, and Managing Director, Healthcare Investment Banking at Merrill Lynch & Co., Inc. Ms. Sun received her M.B.A. degree from Harvard Business School and her B.A. degree from Wellesley College. We believe that Ms. Sun's financial expertise and experience in the life sciences industry qualify her to serve on our Board.

THE BOARD OF DIRECTORS RECOMMENDS A VOTE IN FAVOR OF EACH NAMED NOMINEE.

Information About Our Continuing Directors

Set forth below is certain biographical information as of April 4, 2022, for the remaining members of our Board whose term as a director will continue after the Annual Meeting.

Name	Age	Position
Francis R. Cano, Ph.D.	77	Director
Daniel L. Kisner, M.D.	75	Director
Peter R. Paradiso, Ph.D.	71	Director
Peggy V. Phillips	68	Director
Natale Ricciardi	73	Director
Ryan Spencer	44	Director and Chief Executive Officer

CLASS II DIRECTORS CONTINUING IN OFFICE UNTIL THE 2023 ANNUAL MEETING

Daniel L. Kisner, M.D.

Dr. Kisner has been a member of our Board since July 2010. From 2003 to 2010, Dr. Kisner served as a partner at Aberdare Ventures and prior to that as President and CEO of Caliper Technologies, leading its evolution from a start-up focused on microfluidic lab-on-chip technology to a publicly traded, commercial

organization. Prior to Caliper, he was the President and Chief Operating Officer of Isis Pharmaceuticals, Inc., a biomedical pharmaceutical company. Previously, Dr. Kisner was Division Vice President of Pharmaceutical Development for Abbott Laboratories and Vice President of Clinical Research and Development at SmithKline Beckman Pharmaceuticals. In addition, he held a tenured position in the Division of Oncology at the University of Texas, San Antonio School of Medicine and is certified by the American Board of Internal Medicine in Internal Medicine and Medical Oncology. Additionally, he is currently serving on the boards of Histogen, Inc., a biotechnology company, Oncternal Therapeutics, a biotechnology company and Zynerba Pharmaceuticals, a biotechnology company. Dr. Kisner previously served as chairman of the board for Tekmira Pharmaceuticals, a biopharmaceutical company, until March 2015, and as a director of Lpath, Inc., a medical device company. He holds a B.A. from Rutgers University and an M.D. from Georgetown University. We believe that Dr. Kisner's background with larger, complex technology-based organizations as well as his significant experience with corporate transactions, including investing in venture-backed life science companies provides the Board with insights for setting strategy of the Company and qualifies him to serve as a director.

Natale Ricciardi

Mr. Ricciardi has been a member of our Board since June 2013. Mr. Ricciardi spent his entire 39-year career at Pfizer Inc., a biopharmaceutical company, retiring in 2011 as a member of the Pfizer Executive Leadership Team. While holding the positions of President, Pfizer Global Manufacturing, and Senior Vice President of Pfizer Inc. from 2004 until 2011, Mr. Ricciardi was directly responsible for all of Pfizer's internal and external supply organization, a global enterprise that grew to more than 100 manufacturing facilities supplying small and large molecule pharmaceuticals, vaccines, consumer, nutrition and animal health products. Mr. Ricciardi maintained responsibility for global manufacturing activities from 2004 through 2011. Previously, from 1999 to 2004, he had oversight for Pfizer's U.S. manufacturing operations and from 1995 to 1999 was Vice President of Manufacturing for Pfizer's Animal Health Group. Mr. Ricciardi serves on the board of directors of Prestige Consumer Healthcare, Inc., a public company that sells, manufactures and distributes consumer healthcare products. He also serves on the board of directors of Rapid Micro Biosystems, a public company that provides automated, growth-based, rapid microbial detection technology. He is currently on the Strategic Advisory Board of HealthCare Royalty Partners. Mr. Ricciardi earned a degree in Chemical Engineering from The City College of New York and an MBA in Finance and International Business from Fordham University. We believe Mr. Ricciardi's 39-year career at Pfizer Inc., a leading pharmaceutical company, including his experience as a member of the Pfizer Executive Leadership Team and holding direct responsibility for all of Pfizer's internal supply organization, including global manufacturing, provides the Board with insights for reviewing the operations of the Company and qualifies him to serve as a director.

Ryan Spencer

Mr. Spencer has been a member of our Board since December 2019. Mr. Spencer joined Dynavax in 2006 and has served as our Chief Executive Officer since December 2019, and as interim co-President between May and December 2019. At the time of his appointment as interim co-President in May 2019, Mr. Spencer served as Senior Vice President, Commercial where he was instrumental in leading the launch and commercialization of HEPLISAV-B. Throughout his time at Dynavax since November 2006, Mr. Spencer has held a variety of positions with increasing responsibility, building from a foundation in corporate finance to business strategy and investor relations, including Senior Director Strategic Planning until his promotion in September 2016 to Senior Product Director, followed by promotions in February 2017 to Vice President Corporate Strategy & Commercialization and in May 2019 to Senior Vice President, Commercial. Prior to joining Dynavax, Mr. Spencer was the Assistant Controller at QRS Corporation, a publicly-held technology company, and was a member of the audit practice at Ernst & Young. Mr. Spencer earned a B.A. in Business Economics from University of California, Santa Barbara. We believe that Mr. Spencer's prior experience, including his financial and commercialization experience, his tenure at Dynavax and his role as a Chief Executive Officer qualifies him to serve as a director.

CLASS III DIRECTORS CONTINUING IN OFFICE UNTIL THE 2024 ANNUAL MEETING

Francis R. Cano, Ph.D.

Dr. Cano has been a member of our Board since November 2009. Dr. Cano has been President and Founder of Cano Biotech Corp., a consulting firm focusing on the vaccine business, since 1996 and also serves on the board of Biomerica, Inc., a developer and manufacturer of diagnostic products. Previously, Dr. Cano served on the board of Arbor Vita Corporation, a biopharmaceutical company. From 1993 to 1996, Dr. Cano was President and Chief Operating Officer for Aviron, a biopharmaceutical company, which was later acquired by MedImmune in 2001. As a Co-Founder of Aviron, he completed two rounds of venture financing, a licensing agreement with SmithKline Biologicals and in-licensed Flu-Mist influenza vaccine from the National Institutes of Health. For 21 years, Dr. Cano worked with the Lederle Laboratories Division of American Cyanamid, including as its Vice President and General Manager of the Biologicals unit. He earned a Ph.D. in Microbiology from Pennsylvania State University, served as a Research Associate at Rutgers Institute of Microbiology, and holds a M.S. in Microbiology and a B.S. in Biology from St. John's University. We believe that Dr. Cano's experience as a founder of and advisor to established vaccine businesses provides significant insights for the strategy of the Company with respect to key technical and operational issues in vaccine development and qualifies him to serve as a director.

Peter Paradiso, Ph.D.

Dr. Paradiso has been a member of our Board since September 2020. Dr. Paradiso has worked in vaccine development for over 30 years. Since 2012, he has been the sole proprietor of Paradiso Biologics Consulting, LLC, and he also serves as a member of the Coalition for Epidemic Preparedness Innovations (CEPI) R&D and Manufacturing Investment Committee (RDMIC), which has been established to make investment decisions for vaccine R&D and manufacturing under the COVAX pillar of the ACT-Accelerator. In addition, he is Chairman of a Procurement Reference Group (PRG) to advise The United Nations Children's Fund (UNICEF) and The GAVI Alliance, formerly the Global Alliance for Vaccines and Immunisation (GAVI), on the procurement of rotavirus vaccines. Dr. Paradiso retired in 2012 from his position as Vice President, New Business and Scientific Affairs for Pfizer Vaccines, a Division of Pfizer, Inc. In this position, Dr. Paradiso was responsible for global scientific affairs and strategic planning within the vaccine research and development group and for commercial oversight of products in development. Dr. Paradiso received a Ph.D. in biochemistry from the University of Vermont College of Medicine and a B.S. in Chemistry from St. Lawrence University. We believe that Dr. Paradiso's extensive experience in vaccine development can provide significant insights for the strategy of the Company with respect to key technical and operational issues in vaccine development and qualifies him to serve as a director.

Peggy V. Phillips

Ms. Phillips has been a member of our Board since August 2006. Ms. Phillips served on the board of directors of several biopharmaceutical companies: PhaseRx, Inc. from 2016 to 2018, Tekmira Pharmaceuticals from 2014 to 2015, Portola Pharmaceuticals from 2006 to 2013, as well as the Naval Academy Foundation from 2003 to 2011. From 1996 until 2002, she served on the board of directors of Immunex Corporation, a biotechnology company, and, from 1999, she served as its Chief Operating Officer until the company was acquired by Amgen in 2002. During her career at Immunex, she held positions of increasing responsibility in research, development, manufacturing, sales and marketing. As Senior Vice President for Pharmaceutical Development and General Manager for Enbrel ® from 1994 until 1998, she was responsible for clinical development and regulatory affairs as well as the launch, sales and marketing of the product. Prior to joining Immunex, Ms. Phillips worked at Miles Laboratories. Ms. Phillips holds a B.S. and a M.S. in microbiology from the University of Idaho. We believe that Ms. Phillips provides significant experience in development and commercialization of biotechnology products and that here background and experience with larger, complex organizations provides significant operational and strategic insights in assessing the strategy of the Company and qualifies her to serve as a director.

PROPOSAL 2

APPROVAL OF AN AMENDMENT AND RESTATEMENT OF THE 2018 EQUITY INCENTIVE PLAN

The Board is requesting stockholder approval of an amendment and restatement of the Dynavax Technologies Corporation 2018 Equity Incentive Plan (the ''2018 EIP''). We refer to such amendment and restatement of the 2018 EIP in this proxy statement as the ''Amended 2018 EIP''.

The Amended 2018 EIP contains the following material changes from the 2018 EIP:

- Subject to adjustment for certain changes in our capitalization, the aggregate number of shares of our common stock that may be issued under the Amended 2018 EIP will not exceed 30,040,250 shares (plus the Prior Plans' Returning Shares (as defined below), as such shares become available from time to time), which is an increase of 15,000,000 shares over the aggregate number of shares of our common stock that may be issued under the 2018 EIP.
- Subject to adjustment for certain changes in our capitalization, the aggregate maximum number of shares of our common stock that may be issued pursuant to the exercise of incentive stock options under the Amended 2018 EIP will be 32,600,000 shares, which is an increase of 15,000,000 shares over the aggregate maximum number of shares of our common stock that may be issued pursuant to the exercise of incentive stock options under the 2018 EIP.
- Under the 2018 EIP, (i) the term ''Prior Plan'' means the Dynavax Technologies Corporation 2011 Equity Incentive Plan (the ''2011 EIP'') or the Dynavax Technologies Corporation 2017 Inducement Award Plan (the ''2017 Inducement Plan''), and (ii) certain shares of our common stock subject to any outstanding stock award granted under either of the Prior Plans become available again for issuance under the 2018 EIP. Under the Amended 2018 EIP, the term ''Prior Plan'' also includes the Dynavax Technologies Corporation 2021 Inducement Award Plan (the ''2021 Inducement Plan''), such that certain shares of our common stock subject to any outstanding stock award granted under the 2021 Inducement Plan will also become available again for issuance under the Amended 2018 EIP. Such shares are described below in the definition of ''Prior Plans' Returning Shares''. The Board terminated the 2021 Inducement Plan effective as of April 3, 2022 and, therefore, there are no shares of our common stock available for grant under the 2021 Inducement Plan.
- The 2018 EIP provides certain limits on non-employee director compensation. Specifically, the 2018 EIP provides that the aggregate value of all cash and equity-based compensation granted or paid by us to any individual for service as a non-employee director of the Board with respect to any fiscal year of the Company will not exceed (i) a total of $200,000 with respect to any such cash compensation and (ii) $800,000 in total value with respect to any such equity-based compensation (including awards granted under the 2018 EIP and any other equity-based awards), calculating the value of any such awards based on the grant date fair value of such awards for financial reporting purposes. The Amended 2018 EIP retains such limits, except that for any individual who is first appointed or elected to the Board during any fiscal year of the Company, the limit for such individual's equity-based compensation will be $1,200,000 with respect to such fiscal year. The Board believes it is necessary and in the best interests of our stockholders to increase such limit to ensure that we are able to continue to attract highly qualified non-employee directors to the Board. The foregoing limits on non-employee director compensation (including the increased limit on equity-based compensation for newly appointed or elected directors) are not intended to serve as an increase in the annual amount of non-employee director compensation; rather, such limits were approved for the purpose of limiting the amount of compensation the Board can approve for non-employee directors each year.

Why We Are Asking Our Stockholders to Approve the Amended 2018 EIP

We are seeking stockholder approval of the Amended 2018 EIP primarily to increase the number of shares available for the grant of stock options, restricted stock unit awards and other awards by 15,000,000 shares, which will enable us to have a competitive equity incentive program to compete with our peer group for key talent.

Our stockholders' approval of the Amended 2018 EIP will allow us to continue to grant stock options, restricted stock unit awards and other awards at levels determined appropriate by the Board or Compensation

Committee. The Amended 2018 EIP will also allow us to further utilize a broad array of equity incentives in order to secure and retain the services of our employees and directors, and to continue to provide long-term incentives that align the interests of our employees and directors with the interests of our stockholders.

Stockholder Approval

If this Proposal 2 is approved by our stockholders, the Amended 2018 EIP will become effective as of the date of the Annual Meeting. In the event that our stockholders do not approve this Proposal 2, the Amended 2018 EIP will not become effective and the 2018 EIP will continue in its current form.

Why You Should Vote for the Amended 2018 EIP

The Amended 2018 EIP Combines Compensation and Governance Best Practices

The Amended 2018 EIP includes provisions that are designed to protect our stockholders' interests and to reflect corporate governance best practices including:

- *Stockholder approval is required for additional shares*. The Amended 2018 EIP does not contain an annual ''evergreen'' provision. The Amended 2018 EIP authorizes a fixed number of shares, so that stockholder approval is required to issue any additional shares from the plan.
- *Repricing is not allowed*. The Amended 2018 EIP prohibits the repricing of stock options and stock appreciation rights without prior stockholder approval.
- *No discounted stock options or stock appreciation rights.* All stock options and stock appreciation rights granted under the Amended 2018 EIP must have an exercise price equal to or greater than the fair market value of our common stock on the date the stock option or stock appreciation right is granted.
- *Reasonable share counting provisions.* In general, when awards granted under the Amended 2018 EIP lapse or are canceled, the shares reserved for those awards will be returned to the share reserve and be available for future awards. However, any shares received from the exercise of stock options or withheld for taxes will not be returned to our share reserve.
- *Minimum vesting requirements.* The Amended 2018 EIP provides that no award may vest until at least 12 months following the date of grant of such award, except that shares up to 5% of the share reserve of the Amended 2018 EIP may be issued pursuant to awards that do not meet such vesting requirements.
- *Limit on non-employee director compensation.* The aggregate value of all cash and equity-based compensation granted or paid by us to any individual for service as a non-employee director of the Board with respect to any fiscal year of the Company will not exceed (i) a total of $200,000 with respect to any such cash compensation and (ii) $800,000 in total value with respect to any such equity-based compensation (including awards granted under the Amended 2018 EIP and any other equity-based awards), provided that for any individual who is first appointed or elected to the Board during any fiscal year of the Company, the limit for such individual's equity-based compensation will be $1,200,000 with respect to such fiscal year, in each case calculating the value of any such awards based on the grant date fair value of such awards for financial reporting purposes.
- *Restrictions on dividends.* The Amended 2018 EIP provides that (i) no dividends or dividend equivalents may be paid with respect to any shares of our common stock subject to an award before the date such shares have vested, (ii) any dividends or dividend equivalents that are credited with respect to any such shares will be subject to all of the terms and conditions applicable to such shares under the terms of the applicable award agreement (including any vesting conditions), and (iii) any dividends or dividend equivalents that are credited with respect to any such shares will be forfeited to us on the date such shares are forfeited to or repurchased by us due to a failure to vest.
- *Specific disclosure of award vesting upon a corporate transaction or change in control.* The Amended 2018 EIP specifically provides that if a corporate transaction or change in control (each, a ''Transaction'') occurs and the surviving or acquiring corporation (or its parent company) does not assume or continue outstanding awards under the Amended 2018 EIP and/or any Prior Plan (i.e., the

2011 EIP, the 2017 Inducement Plan or the 2021 Inducement Plan), or substitute similar stock awards for such outstanding awards, then with respect to any such awards that have not been assumed, continued or substituted and that are held by participants whose continuous service has not terminated prior to the Transaction, the vesting of such awards will be accelerated in full (and with respect to performance stock awards, vesting will be deemed to be satisfied at the target level of performance).

Overhang

The following table provides certain information regarding our equity incentive program.

	As of April 4, 2022
Total number of shares of common stock subject to outstanding stock options	11,483,388
Weighted-average exercise price of outstanding stock options	$11.39
Weighted-average remaining term of outstanding stock options	4.57 years
Total number of shares of common stock subject to outstanding full value awards	3,600,664
Total number of shares of common stock available for grant under the 2018 EIP[(1)]	799,684
Total number of shares of common stock outstanding	126,311,669
Per-share closing price of common stock as reported on Nasdaq Capital Market	$11.56

(1) As of April 4, 2022, there were no shares of common stock available for grant under any of our other equity incentive plans. The Board terminated the 2021 Inducement Plan effective as of April 3, 2022 and, therefore, there are no shares of our common stock available for grant under the 2021 Inducement Plan.

We Manage Our Equity Incentive Award Use Carefully and Dilution Is Reasonable

We continue to believe that equity incentive awards such as stock options and restricted stock unit awards are a vital part of our overall compensation program. Our compensation philosophy reflects broad-based eligibility for equity incentive awards, and we grant awards to substantially all of our employees. However, we recognize that equity incentive awards dilute existing stockholders, and, therefore, we must responsibly manage the growth of our equity compensation program. We are committed to effectively monitoring our equity compensation share reserve, including our ‘‘burn rate,’’ to ensure that we maximize stockholders’ value by granting the appropriate number of equity incentive awards necessary to attract, reward, and retain employees. In addition, the vesting of some of our equity awards granted to our named executive officers are contingent on meeting pre-defined performance criteria, thereby ensuring alignment with value creation.

The following table shows our responsible historical dilution and burn rate percentages.

As of December 31	2021	2020	2019
Full Dilution[(1)]	13.50%	15.62%	15.39%
Gross Burn Rate (as discussed in greater detail below)[(2)]	5.17%	3.39%	7.73%

(1) Full Dilution is calculated as (shares available for grant + shares subject to outstanding equity incentive awards)/(weighted average common stock outstanding + shares available for grant + shares subject to outstanding equity incentive awards).

(2) Gross Burn Rate is calculated as (shares subject to options granted + shares subject to other equity incentive awards granted)/weighted average common stock outstanding.

The Size of Our Share Reserve Increase Request Is Reasonable

If this Proposal 2 is approved by our stockholders, we will have 15,000,000 new shares available for grant after our Annual Meeting for a total of approximately 15,799,684 shares available for grant after our Annual Meeting (based on shares available under the 2018 EIP as of April 4, 2022) (plus the Prior Plans’ Returning Shares (as defined below), as such shares become available from time to time), and absent any unforeseen circumstances, we anticipate returning to stockholders for additional shares in 2024 or 2025.

Burn Rate

The following table provides detailed information regarding the activity related to our equity incentive plans for fiscal years 2021, 2020 and 2019.

	Fiscal Year 2021	Fiscal Year 2020	Fiscal Year 2019
Total number of shares of common stock subject to stock options granted	3,893,732	2,002,871	3,745,751
Total number of shares of common stock subject to full value awards granted	2,114,629	1,412,456	1,822,257
Weighted-average number of shares of common stock outstanding	116,264,340	100,752,729	72,023,571
Burn Rate	5.17%	3.39%	7.73%

Description of the Amended 2018 EIP

A summary of the principal features of the Amended 2018 EIP follows below. The summary is qualified by the full text of the Amended 2018 EIP that is attached as Appendix A to this proxy statement.

Purpose

The Amended 2018 EIP is designed to secure and retain the services of our employees and directors, provide incentives for our employees and directors to exert maximum efforts for the success of the Company and its affiliates, and provide a means by which our employees and directors may be given an opportunity to benefit from increases in the value of our common stock.

Types of Awards

The Amended 2018 EIP provides for the grant of incentive stock options, nonstatutory stock options, stock appreciation rights, restricted stock awards, restricted stock unit awards, performance stock awards, and other stock awards.

Shares Available for Awards

Subject to adjustment for certain changes in our capitalization, the aggregate number of shares of our common stock that may be issued under the Amended 2018 EIP will not exceed 30,040,250 shares (which is the sum of (i) 140,250 shares (the number of unallocated shares that were available for grant under the 2011 EIP as of the effective date of the 2018 EIP), (ii) 5,000,000 additional shares that were reserved as of the effective date of the 2018 EIP, (iii) 2,300,000 shares that were approved at the 2019 Annual Meeting, (iv) 7,600,000 shares that were approved at the 2020 Annual Meeting, and (v) 15,000,000 newly requested shares), plus the Prior Plans' Returning Shares (as defined below), as such shares become available from time to time.

The term ''Prior Plans' Returning Shares'' refers to the following shares of our common stock subject to any outstanding stock award granted under any of the Prior Plans: (i) any shares subject to such stock award that are not issued because such stock award expires or otherwise terminates without all of the shares covered by such stock award having been issued; (ii) any shares subject to such stock award that are not issued because such stock award is settled in cash; and (iii) any shares issued pursuant to such stock award that are forfeited back to or repurchased by us because of a failure to vest.

The following shares of our common stock (collectively, the ''Amended 2018 EIP Returning Shares'') will also become available again for issuance under the Amended 2018 EIP: (i) any shares subject to a stock award granted under the Amended 2018 EIP that are not issued because such stock award expires or otherwise terminates without all of the shares covered by such stock award having been issued; (ii) any shares subject to a stock award granted under the Amended 2018 EIP that are not issued because such stock award is settled in cash; and (iii) any shares issued pursuant to a stock award granted under the Amended 2018 EIP that are forfeited back to or repurchased by us because of a failure to vest.

The following shares of our common stock will not become available again for issuance under the Amended 2018 EIP: (i) any shares that are reacquired or withheld (or not issued) by us to satisfy the exercise, strike or purchase price of a stock award granted under the Amended 2018 EIP or any Prior Plan (including any shares

subject to such award that are not delivered because such award is exercised through a reduction of shares subject to such award); (ii) any shares that are reacquired or withheld (or not issued) by us to satisfy a tax withholding obligation in connection with a stock award granted under the Amended 2018 EIP or any Prior Plan; (iii) any shares repurchased by us on the open market with the proceeds of the exercise, strike or purchase price of a stock award granted under the Amended 2018 EIP or any Prior Plan; and (iv) in the event that a stock appreciation right granted under the Amended 2018 EIP or any Prior Plan is settled in shares, the gross number of shares subject to such award.

The number of shares of our common stock available for issuance under the Amended 2018 EIP will be reduced by: (i) one share for each share issued pursuant to an Appreciation Award granted under the Amended 2018 EIP; (ii) 1.28 shares for each share issued pursuant to a Full Value Award granted under the Amended 2018 EIP prior to May 30, 2019; and (iii) 1.40 shares for each share issued pursuant to a Full Value Award granted under the Amended 2018 EIP on or after May 30, 2019.

The number of shares of our common stock available for issuance under the Amended 2018 EIP will be increased by: (i) one share for each Prior Plans' Returning Share or Amended 2018 EIP Returning Share subject to an Appreciation Award; (ii) 1.28 shares for each Prior Plans' Returning Share or Amended 2018 EIP Returning Share subject to a Full Value Award that returned to the Amended 2018 EIP prior to May 30, 2019; and (iii) 1.40 shares for each Prior Plans' Returning Share or Amended 2018 EIP Returning Share subject to a Full Value Award that returns to the Amended 2018 EIP on or after May 30, 2019.

Eligibility

All of our (including our affiliates') employees and non-employee directors are eligible to participate in the Amended 2018 EIP and may receive all types of awards other than incentive stock options. Incentive stock options may be granted under the Amended 2018 EIP only to our (including our affiliates') employees.

As of April 4, 2022, we (including our affiliates) had approximately 331 employees and 10 non-employee directors.

Non-Employee Director Compensation Limit

The aggregate value of all cash and equity-based compensation granted or paid by us to any individual for service as a non-employee director of the Board with respect to any fiscal year of the Company will not exceed: (i) a total of $200,000 with respect to any such cash compensation; and (ii) $800,000 in total value with respect to any such equity-based compensation (including awards granted under the Amended 2018 EIP and any other equity-based awards), provided that for any individual who is first appointed or elected to the Board during any fiscal year of the Company, the limit for such individual's equity-based compensation will be $1,200,000 with respect to such fiscal year, in each case calculating the value of any such awards based on the grant date fair value of such awards for financial reporting purposes.

Administration

The Amended 2018 EIP will be administered by our Board, which may in turn delegate authority to administer the Amended 2018 EIP to a committee. Our Board has delegated concurrent authority to administer the Amended 2018 EIP to our Compensation Committee, but may, at any time, re-vest in itself some or all of the power delegated to our Compensation Committee. Our Board and Compensation Committee are each considered to be a Plan Administrator for purposes of this Proposal 2.

Subject to the terms of the Amended 2018 EIP, the Plan Administrator may determine the recipients, the types of awards to be granted, the number of shares of our common stock subject to or the cash value of awards, and the terms and conditions of awards granted under the Amended 2018 EIP, including the period of their exercisability and vesting. The Plan Administrator also has the authority to provide for accelerated exercisability and vesting of awards. Subject to the limitations set forth below, the Plan Administrator also determines the fair market value applicable to a stock award and the exercise or strike price of stock options and stock appreciation rights granted under the Amended 2018 EIP.

The Plan Administrator may also delegate to one or more officers the authority to designate employees who are not officers to be recipients of certain stock awards and the number of shares of our common stock subject to

such stock awards. Under any such delegation, the Plan Administrator will specify the total number of shares of our common stock that may be subject to the stock awards granted by such officer. The officer may not grant a stock award to himself or herself.

Repricing; Cancellation and Re-Grant of Stock Awards

Under the Amended 2018 EIP, the Plan Administrator does not have the authority to reprice any outstanding stock option or stock appreciation right by reducing the exercise or strike price of the stock option or stock appreciation right or to cancel any outstanding stock option or stock appreciation right that has an exercise or strike price greater than the then-current fair market value of our common stock in exchange for cash or other stock awards without obtaining the approval of our stockholders. Such approval must be obtained within 12 months prior to such an event.

Minimum Vesting Requirements

Under the Amended 2018 EIP, no award may vest until at least 12 months following the date of grant of such award, except that shares up to 5% of the share reserve of the Amended 2018 EIP may be issued pursuant to awards that do not meet such vesting requirements.

Dividends and Dividend Equivalents

The Amended 2018 EIP provides that dividends or dividend equivalents may be paid or credited with respect to any shares of our common stock subject to an award, as determined by the Plan Administrator and contained in the applicable award agreement; *provided, however*, that (i) no dividends or dividend equivalents may be paid with respect to any such shares before the date such shares have vested, (ii) any dividends or dividend equivalents that are credited with respect to any such shares will be subject to all of the terms and conditions applicable to such shares under the terms of the applicable award agreement (including any vesting conditions), and (iii) any dividends or dividend equivalents that are credited with respect to any such shares will be forfeited to us on the date such shares are forfeited to or repurchased by us due to a failure to vest.

Stock Options

Stock options may be granted under the Amended 2018 EIP pursuant to stock option agreements. The Amended 2018 EIP permits the grant of stock options that are intended to qualify as incentive stock options (''ISOs'') and non-statutory stock options (''NSOs'').

The exercise price of a stock option granted under the Amended 2018 EIP may not be less than 100% of the fair market value of our common stock on the date of grant and, in some cases (see ''Limitations on Incentive Stock Options'' below), may not be less than 110% of such fair market value.

The term of stock options granted under the Amended 2018 EIP may not exceed seven years from the date of grant and, in some cases (see ''Limitations on Incentive Stock Options'' below), may not exceed five years from the date of grant. Except as otherwise provided in a participant's stock option agreement or other written agreement with us or one of our affiliates, if a participant's service relationship with us or any of our affiliates (referred to in this Proposal 2 as ''continuous service'') terminates (other than for cause and other than upon the participant's death or disability), the participant may exercise any vested stock options for up to three months following the participant's termination of continuous service. Except as otherwise provided in a participant's stock option agreement or other written agreement with us or one of our affiliates, if a participant's continuous service terminates due to the participant's disability or death (or the participant dies within a specified period, if any, following termination of continuous service), the participant, or his or her beneficiary, as applicable, may exercise any vested stock options for up to 12 months following the participant's termination due to the participant's disability or for up to 18 months following the participant's death. Except as explicitly provided otherwise in a participant's stock option agreement or other written agreement with us or one of our affiliates, if a participant's continuous service is terminated for cause (as defined in the Amended 2018 EIP), all stock options held by the participant will terminate upon the participant's termination of continuous service and the participant will be prohibited from exercising any stock option from and after such termination date. Except as otherwise provided in a participant's stock option agreement or other written agreement with us or one of our affiliates, the term of a stock option may be extended if the exercise of the stock option following the participant's termination of continuous service (other than for cause and other than upon the participant's death or disability) would be

prohibited by applicable securities laws or if the sale of any common stock received upon exercise of the stock option following the participant's termination of continuous service (other than for cause) would violate our insider trading policy. In no event, however, may a stock option be exercised after its original expiration date.

Acceptable forms of consideration for the purchase of our common stock pursuant to the exercise of a stock option under the Amended 2018 EIP will be determined by the Plan Administrator and may include payment: (i) by cash, check, bank draft or money order payable to us; (ii) pursuant to a program developed under Regulation T as promulgated by the Federal Reserve Board; (iii) by delivery to us of shares of our common stock (either by actual delivery or attestation); (iv) by a net exercise arrangement (for NSOs only); or (v) in other legal consideration approved by the Plan Administrator.

Stock options granted under the Amended 2018 EIP may vest and become exercisable in cumulative increments, as determined by the Plan Administrator at the rate specified in the stock option agreement (subject to the limitations described in ''Minimum Vesting Requirements'' above). Shares covered by different stock options granted under the Amended 2018 EIP may be subject to different vesting schedules as the Plan Administrator may determine.

The Plan Administrator may impose limitations on the transferability of stock options granted under the Amended 2018 EIP in its discretion. Generally, a participant may not transfer a stock option granted under the Amended 2018 EIP other than by will or the laws of descent and distribution or, subject to approval by the Plan Administrator, pursuant to a domestic relations order or an official marital settlement agreement. However, the Plan Administrator may permit transfer of a stock option in a manner that is not prohibited by applicable tax and securities laws. In addition, subject to approval by the Plan Administrator, a participant may designate a beneficiary who may exercise the stock option following the participant's death. Notwithstanding the foregoing, no option may be transferred to any financial institution without prior stockholder approval.

Limitations on Incentive Stock Options

The aggregate fair market value, determined at the time of grant, of shares of our common stock with respect to ISOs that are exercisable for the first time by a participant during any calendar year under all of our stock plans may not exceed $100,000. The stock options or portions of stock options that exceed this limit or otherwise fail to qualify as ISOs are treated as NSOs. No ISO may be granted to any person who, at the time of grant, owns or is deemed to own stock possessing more than 10% of our total combined voting power or that of any affiliate unless the following conditions are satisfied:

- the exercise price of the ISO must be at least 110% of the fair market value of our common stock on the date of grant; and
- the term of the ISO must not exceed five years from the date of grant.

Subject to adjustment for certain changes in our capitalization, the aggregate maximum number of shares of our common stock that may be issued pursuant to the exercise of ISOs under the Amended 2018 EIP is 32,600,000 shares.

Stock Appreciation Rights

Stock appreciation rights may be granted under the Amended 2018 EIP pursuant to stock appreciation right agreements. Each stock appreciation right is denominated in common stock share equivalents. The strike price of each stock appreciation right will be determined by the Plan Administrator, but will in no event be less than 100% of the fair market value of our common stock on the date of grant. The term of stock appreciation rights granted under the Amended 2018 EIP may not exceed seven years from the date of grant. The Plan Administrator may also impose restrictions or conditions upon the vesting of stock appreciation rights that it deems appropriate (subject to the limitations described in ''Minimum Vesting Requirements'' above). The appreciation distribution payable upon exercise of a stock appreciation right may be paid in shares of our common stock, in cash, in a combination of cash and stock, or in any other form of consideration determined by the Plan Administrator and set forth in the stock appreciation right agreement. Stock appreciation rights will be subject to the same conditions upon termination of continuous service and restrictions on transfer as stock options under the Amended 2018 EIP.

Restricted Stock Awards

Restricted stock awards may be granted under the Amended 2018 EIP pursuant to restricted stock award agreements. A restricted stock award may be granted in consideration for cash, check, bank draft or money order payable to us, the participant's services performed for us or any of our affiliates, or any other form of legal consideration acceptable to the Plan Administrator. Shares of our common stock acquired under a restricted stock award may be subject to forfeiture to or repurchase by us in accordance with a vesting schedule to be determined by the Plan Administrator (subject to the limitations described in ''Minimum Vesting Requirements'' above). Rights to acquire shares of our common stock under a restricted stock award may be transferred only upon such terms and conditions as are set forth in the restricted stock award agreement; *provided, however*, that no restricted stock award may be transferred to any financial institution without prior stockholder approval. Upon a participant's termination of continuous service for any reason, any shares subject to restricted stock awards held by the participant that have not vested as of such termination date may be forfeited to or repurchased by us.

Restricted Stock Unit Awards

Restricted stock unit awards may be granted under the Amended 2018 EIP pursuant to restricted stock unit award agreements. Payment of any purchase price may be made in any form of legal consideration acceptable to the Plan Administrator. A restricted stock unit award may be settled by the delivery of shares of our common stock, in cash, in a combination of cash and stock, or in any other form of consideration determined by the Plan Administrator and set forth in the restricted stock unit award agreement. Restricted stock unit awards may be subject to vesting in accordance with a vesting schedule to be determined by the Plan Administrator (subject to the limitations described in ''Minimum Vesting Requirements'' above). Except as otherwise provided in a participant's restricted stock unit award agreement or other written agreement with us or one of our affiliates, restricted stock units that have not vested will be forfeited upon the participant's termination of continuous service for any reason.

Performance Stock Awards

A performance stock award is a stock award that is payable (including that may be granted, may vest, or may be exercised) contingent upon the attainment of pre-determined performance goals during a performance period. A performance stock award may require the completion of a specified period of continuous service. The length of any performance period, the performance goals to be achieved during the performance period, and the measure of whether and to what degree such performance goals have been attained will be determined by the Plan Administrator (subject to the limitations described in ''Minimum Vesting Requirements'' above). In addition, to the extent permitted by applicable law and the performance stock award agreement, the Plan Administrator may determine that cash may be used in payment of performance stock awards.

Performance goals under the Amended 2018 EIP will be based on any one or more of the following performance criteria: (i) earnings (including earnings per share and net earnings); (ii) earnings before interest, taxes and depreciation; (iii) earnings before interest, taxes, depreciation and amortization (EBITDA); (iv) total stockholder return; (v) return on equity or average stockholder's equity; (vi) return on assets, investment, or capital employed; (vii) stock price or stock price performance; (viii) margin (including gross margin); (ix) net income (before or after taxes); (x) operating income; (xi) operating income after taxes; (xii) pre-tax profit; (xiii) operating cash flow; (xiv) sales or revenue targets; (xv) increases in revenue or product revenue; (xvi) expenses and cost reduction goals; (xvii) improvement in or attainment of working capital levels; (xviii) economic value added (or an equivalent metric); (xix) market share; (xx) cash flow; (xxi) cash flow per share; (xxii) share price performance; (xxiii) debt reduction; (xxiv) implementation or completion of projects or processes; (xxv) customer satisfaction; (xxvi) stockholders' equity; (xxvii) capital expenditures; (xxviii) debt levels; (xxix) operating profit or net operating profit; (xxx) workforce diversity; (xxxi) growth of net income or operating income; (xxxii) billings; (xxxiii) submission to, or approval by, a regulatory body (including but not limited to the U.S. Food and Drug Administration) of an applicable filing for a product candidate or other product development milestones; (xxxiv) acquisitions, divestitures, joint ventures, strategic alliances, licenses or collaborations; (xxxv) spin-offs, split-ups, reorganizations, recapitalizations, restructurings, financings (debt or equity) or refinancings; (xxxvi) manufacturing or process development, clinical trial, regulatory, intellectual property, compliance or research objectives; and (xxxvii) any other measures of performance selected by the Plan Administrator.

Performance goals may be based on a company-wide basis, with respect to one or more business units, divisions, affiliates or business segments, and in either absolute terms or relative to the performance of one or more comparable companies or the performance of one or more relevant indices. The Plan Administrator is authorized to make appropriate adjustments in the method of calculating the attainment of performance goals for a performance period as follows: (i) to exclude restructuring and/or other nonrecurring charges; (ii) to exclude exchange rate effects, as applicable, for non-U.S. dollar denominated performance goals; (iii) to exclude the effects of changes to generally accepted accounting principles; (iv) to exclude the effects of any statutory adjustments to corporate tax rates; (v) to exclude the effects of items that are ''unusual'' in nature or occur ''infrequently'' as determined under generally accepted accounting principles; (vi) to exclude the dilutive effects of acquisitions or joint ventures; (vii) to assume that any business divested by the Company achieved performance objectives at targeted levels during the balance of a performance period following such divestiture; (viii) to exclude the effect of any change in the outstanding shares of our common stock by reason of any stock dividend or split, stock repurchase, reorganization, recapitalization, merger, consolidation, spin-off, combination or exchange of shares or other similar corporate change, or any distributions to common stockholders other than regular cash dividends; (ix) to exclude the effects of stock based compensation and/or the award of an annual cash incentive under our Annual Incentive Program; (x) to exclude the effect of any other unusual, non-recurring gain or loss or other extraordinary item; and (xi) to make other appropriate adjustments selected by the Plan Administrator.

In addition, the Plan Administrator retains the discretion to reduce or eliminate the compensation or economic benefit due upon the attainment of any performance goals and to define the manner of calculating the performance criteria it selects to use for a performance period.

Other Stock Awards

Other forms of stock awards valued in whole or in part by reference to, or otherwise based on, our common stock may be granted either alone or in addition to other stock awards under the Amended 2018 EIP. Subject to the terms of the Amended 2018 EIP (including the limitations described in ''Minimum Vesting Requirements'' above), the Plan Administrator will have sole and complete authority to determine the persons to whom and the time or times at which such other stock awards will be granted, the number of shares of our common stock to be granted and all other terms and conditions of such other stock awards.

Clawback/Recoupment

Awards granted under the Amended 2018 EIP will be subject to recoupment in accordance with any clawback policy that we are required to adopt pursuant to the listing standards of any national securities exchange or association on which our securities are listed or as is otherwise required by the Dodd-Frank Wall Street Reform and Consumer Protection Act or other applicable law. In addition, the Plan Administrator may impose other clawback, recovery or recoupment provisions in an award agreement, including a reacquisition right in respect of previously acquired shares or other cash or property upon the occurrence of cause.

Changes to Capital Structure

In the event of certain capitalization adjustments, the Plan Administrator will appropriately adjust: (i) the class(es) and maximum number of securities subject to the Amended 2018 EIP; (ii) the class(es) and maximum number of securities that may be issued pursuant to the exercise of ISOs; and (iii) the class(es) and number of securities and price per share of stock subject to outstanding stock awards.

Corporate Transaction and Change in Control

The following provisions will apply to outstanding awards under the Amended 2018 EIP and any Prior Plan in the event of a corporate transaction (as defined in the Amended 2018 EIP and described below) or a change in control (as defined in the Amended 2018 EIP and described below) unless otherwise provided in the instrument evidencing the award, in any other written agreement between us or one of our affiliates and the participant, or in our director compensation policy. For purposes of this Proposal 2, the term ''Transaction'' will mean such corporate transaction or change in control.

In the event of a Transaction, any surviving or acquiring corporation (or its parent company) may assume or continue any or all outstanding awards under the Amended 2018 EIP and/or any Prior Plan, or may substitute

similar stock awards for such outstanding awards (including, but not limited to, awards to acquire the same consideration paid to the stockholders of the Company pursuant to the Transaction), and any reacquisition or repurchase rights held by the Company in respect of shares issued pursuant to any outstanding awards under the Amended 2018 EIP and/or any Prior Plan may be assigned by the Company to the surviving or acquiring corporation (or its parent company). The terms of any such assumption, continuation or substitution will be set by the Plan Administrator.

In the event of a Transaction in which the surviving or acquiring corporation (or its parent company) does not assume or continue outstanding awards under the Amended 2018 EIP and/or any Prior Plan, or substitute similar stock awards for such outstanding awards, then with respect to any such awards that have not been assumed, continued or substituted and that are held by participants whose continuous service has not terminated prior to the effective time of the Transaction (the ''Current Participants''), the vesting (and exercisability, if applicable) of such awards will be accelerated in full (and with respect to performance stock awards, vesting will be deemed to be satisfied at the target level of performance) to a date prior to the effective time of the Transaction (contingent upon the closing or completion of the Transaction) as the Plan Administrator will determine (or, if the Plan Administrator does not determine such a date, to the date that is five days prior to the effective time of the Transaction), and such awards will terminate if not exercised (if applicable) prior to the effective time of the Transaction in accordance with the exercise procedures determined by the Plan Administrator, and any reacquisition or repurchase rights held by the Company with respect to such awards will lapse (contingent upon the closing or completion of the Transaction).

In the event of a Transaction in which the surviving or acquiring corporation (or its parent company) does not assume or continue outstanding awards under the Amended 2018 EIP and/or any Prior Plan, or substitute similar stock awards for such outstanding awards, then with respect to any such awards that have not been assumed, continued or substituted and that are held by participants other than the Current Participants, such awards will terminate if not exercised (if applicable) prior to the effective time of the Transaction in accordance with the exercise procedures determined by the Plan Administrator; *provided, however*, that any reacquisition or repurchase rights held by the Company with respect to such awards will not terminate and may continue to be exercised notwithstanding the Transaction.

Notwithstanding the foregoing, in the event any outstanding award under the Amended 2018 EIP and/or any Prior Plan held by a participant will terminate if not exercised prior to the effective time of a Transaction, the Plan Administrator may provide that the participant may not exercise such award but instead will receive a payment, in such form as may be determined by the Plan Administrator, equal in value to the excess, if any, of (i) the value of the property the participant would have received upon the exercise of such award immediately prior to the effective time of the Transaction, over (ii) any exercise price payable by the participant in connection with such exercise.

Unless provided otherwise in the participant's award agreement, in any other written agreement or plan with us or one of our affiliates, or in our director compensation policy, outstanding awards under the Amended 2018 EIP and any Prior Plan will not be subject to additional acceleration of vesting and exercisability upon or after a change in control.

For purposes of the Amended 2018 EIP, a corporate transaction generally will be deemed to occur in the event of the consummation of: (i) a sale or other disposition of all or substantially all of our consolidated assets; (ii) a sale or other disposition of at least 90% of our outstanding securities; (iii) a merger, consolidation or similar transaction following which we are not the surviving corporation; or (iv) a merger, consolidation or similar transaction following which we are the surviving corporation but the shares of our common stock outstanding immediately prior to the transaction are converted or exchanged into other property by virtue of the transaction.

For purposes of the Amended 2018 EIP, a change in control generally will be deemed to occur in the event: (i) a person, entity or group acquires, directly or indirectly, our securities representing more than 50% of the combined voting power of our then outstanding securities, other than by virtue of a merger, consolidation, or similar transaction; (ii) there is consummated a merger, consolidation, or similar transaction and, immediately after the consummation of such transaction, our stockholders immediately prior thereto do not own, directly or indirectly, more than 50% of the combined outstanding voting power of the surviving entity or the parent of the surviving entity in substantially the same proportions as their ownership of our outstanding voting securities

immediately prior to such transaction; (iii) there is consummated a sale or other disposition of all or substantially all of our consolidated assets, other than a sale or other disposition to an entity in which more than 50% of the entity's combined voting power is owned by our stockholders in substantially the same proportions as their ownership of our outstanding voting securities immediately prior to such sale or other disposition; or (iv) over a period of 12 months or less, a majority of our Board becomes comprised of individuals whose nomination, appointment, or election was not approved by a majority of the Board members or their approved successors.

Plan Amendments and Termination

The Plan Administrator has the authority to amend or terminate the Amended 2018 EIP at any time. However, except as otherwise provided in the Amended 2018 EIP or an award agreement, no amendment or termination of the Amended 2018 EIP may materially impair a participant's rights under his or her outstanding awards without the participant's consent.

We will obtain stockholder approval of any amendment to the Amended 2018 EIP as required by applicable law and listing requirements. No incentive stock options may be granted under the Amended 2018 EIP after April 8, 2028, which is the tenth anniversary of the date the 2018 EIP was originally adopted by the Board.

U.S. Federal Income Tax Consequences

The following is a summary of the principal United States federal income tax consequences to participants and us with respect to participation in the Amended 2018 EIP. This summary is not intended to be exhaustive and does not discuss the income tax laws of any local, state or foreign jurisdiction in which a participant may reside. The information is based upon current federal income tax rules and therefore is subject to change when those rules change. Because the tax consequences to any participant may depend on his or her particular situation, each participant should consult the participant's tax adviser regarding the federal, state, local and other tax consequences of the grant or exercise of an award or the disposition of stock acquired under the Amended 2018 EIP. The Amended 2018 EIP is not qualified under the provisions of Section 401(a) of the Internal Revenue Code of 1986, as amended (the ''Code''), and is not subject to any of the provisions of the Employee Retirement Income Security Act of 1974. Our ability to realize the benefit of any tax deductions described below depends on our generation of taxable income as well as the requirement of reasonableness, the provisions of Section 162(m) of the Code and the satisfaction of our tax reporting obligations.

Nonstatutory Stock Options

Generally, there is no taxation upon the grant of an NSO if the stock option is granted with an exercise price equal to the fair market value of the underlying stock on the grant date. Upon exercise, a participant will recognize ordinary income equal to the excess, if any, of the fair market value of the underlying stock on the date of exercise of the stock option over the exercise price. If the participant is employed by us or one of our affiliates, that income will be subject to withholding taxes. The participant's tax basis in those shares will be equal to their fair market value on the date of exercise of the stock option, and the participant's capital gain holding period for those shares will begin on that date.

We will generally be entitled to a tax deduction equal to the taxable ordinary income realized by the participant.

Incentive Stock Options

The Amended 2018 EIP provides for the grant of stock options that are intended to qualify as ''incentive stock options,'' as defined in Section 422 of the Code. Under the Code, a participant generally is not subject to ordinary income tax upon the grant or exercise of an ISO. If the participant holds a share received upon exercise of an ISO for more than two years from the date the stock option was granted and more than one year from the date the stock option was exercised, which is referred to as the required holding period, the difference, if any, between the amount realized on a sale or other taxable disposition of that share and the participant's tax basis in that share will be long-term capital gain or loss.

If, however, a participant disposes of a share acquired upon exercise of an ISO before the end of the required holding period, which is referred to as a disqualifying disposition, the participant generally will recognize ordinary income in the year of the disqualifying disposition equal to the excess, if any, of the fair

market value of the share on the date of exercise of the stock option over the exercise price. However, if the sales proceeds are less than the fair market value of the share on the date of exercise of the stock option, the amount of ordinary income recognized by the participant will not exceed the gain, if any, realized on the sale. If the amount realized on a disqualifying disposition exceeds the fair market value of the share on the date of exercise of the stock option, that excess will be short-term or long-term capital gain, depending on whether the holding period for the share exceeds one year.

For purposes of the alternative minimum tax, the amount by which the fair market value of a share of stock acquired upon exercise of an ISO exceeds the exercise price of the stock option generally will be an adjustment included in the participant's alternative minimum taxable income for the year in which the stock option is exercised. If, however, there is a disqualifying disposition of the share in the year in which the stock option is exercised, there will be no adjustment for alternative minimum tax purposes with respect to that share. In computing alternative minimum taxable income, the tax basis of a share acquired upon exercise of an ISO is increased by the amount of the adjustment taken into account with respect to that share for alternative minimum tax purposes in the year the stock option is exercised.

We are not allowed a tax deduction with respect to the grant or exercise of an ISO or the disposition of a share acquired upon exercise of an ISO after the required holding period. If there is a disqualifying disposition of a share, however, we will generally be entitled to a tax deduction equal to the taxable ordinary income realized by the participant, provided that either the employee includes that amount in income or we timely satisfy our reporting requirements with respect to that amount.

Restricted Stock Awards

Generally, the recipient of a restricted stock award will recognize ordinary income at the time the stock is received equal to the excess, if any, of the fair market value of the stock received over any amount paid by the recipient in exchange for the stock. If, however, the stock is not vested when it is received (for example, if the employee is required to work for a period of time in order to have the right to sell the stock), the recipient generally will not recognize income until the stock becomes vested, at which time the recipient will recognize ordinary income equal to the excess, if any, of the fair market value of the stock on the date it becomes vested over any amount paid by the recipient in exchange for the stock. A recipient may, however, file an election with the Internal Revenue Service, within 30 days following his or her receipt of the stock award, to recognize ordinary income, as of the date the recipient receives the award, equal to the excess, if any, of the fair market value of the stock on the date the award is granted over any amount paid by the recipient for the stock.

The recipient's basis for the determination of gain or loss upon the subsequent disposition of shares acquired from a restricted stock award will be the amount paid for such shares plus any ordinary income recognized either when the stock is received or when the stock becomes vested.

We will generally be entitled to a tax deduction equal to the taxable ordinary income realized by the recipient of the restricted stock award.

Restricted Stock Unit Awards

Generally, the recipient of a restricted stock unit award structured to comply with the requirements of Section 409A of the Code or an exemption to Section 409A of the Code will recognize ordinary income at the time the stock is delivered equal to the excess, if any, of the fair market value of the stock received over any amount paid by the recipient in exchange for the stock. To comply with the requirements of Section 409A of the Code, the stock subject to a restricted stock unit award may generally only be delivered upon one of the following events: a fixed calendar date (or dates), separation from service, death, disability or a change in control. If delivery occurs on another date, unless the restricted stock unit award otherwise complies with or qualifies for an exemption to the requirements of Section 409A of the Code, in addition to the tax treatment described above, the recipient will owe an additional 20% federal tax and interest on any taxes owed.

The recipient's basis for the determination of gain or loss upon the subsequent disposition of shares acquired from a restricted stock unit award will be the amount paid for such shares plus any ordinary income recognized when the stock is delivered.

We will generally be entitled to a tax deduction equal to the taxable ordinary income realized by the recipient of the restricted stock unit award.

Stock Appreciation Rights

Generally, if a stock appreciation right is granted with an exercise price equal to the fair market value of the underlying stock on the grant date, the recipient will recognize ordinary income equal to the fair market value of the stock or cash received upon such exercise. We will generally be entitled to a tax deduction equal to the taxable ordinary income realized by the recipient of the stock appreciation right.

Section 162(m) Limitations

Under Section 162(m) of the Code (''Section 162(m)''), compensation paid to any publicly held corporation's ''covered employees'' that exceeds $1 million per taxable year for any covered employee is generally non-deductible. Awards granted under the Amended 2018 EIP will be subject to the deduction limit under Section 162(m) and will not be eligible to qualify for the performance-based compensation exception under Section 162(m) pursuant to the transition relief provided by the Tax Cuts and Jobs Act.

New Plan Benefits under Amended 2018 EIP

Name and Position	Number of Shares
Ryan Spencer Chief Executive Officer and Director	(1)
David F. Novack President and Chief Operating Officer	(1)
Kelly MacDonald Senior Vice President and Chief Financial Officer	(1)
Michael S. Ostrach Former Senior Vice President, Chief Financial Officer and Chief Business Officer	(2)
Robert Janssen, M.D. Senior Vice President and Chief Medical Officer	(1)
All current executive officers as a group	(1)
All current directors who are not executive officers as a group	(3)
All employees, including all current officers who are not executive officers, as a group	(1)

(1) Awards granted under the Amended 2018 EIP to our executive officers and other employees are discretionary and are not subject to set benefits or amounts under the terms of the Amended 2018 EIP, and our Board and our Compensation Committee have not granted any awards under the Amended 2018 EIP subject to stockholder approval of this Proposal 2. Accordingly, the benefits or amounts that will be received by or allocated to our executive officers and other employees under the Amended 2018 EIP are not determinable.

(2) Mr. Ostrach retired from the Company, effective April 1, 2021. Therefore, he is not eligible to receive any future awards under the Amended 2018 EIP.

(3) Awards granted under the Amended 2018 EIP to our non-employee directors are discretionary and are not subject to set benefits or amounts under the terms of the Amended 2018 EIP. However, pursuant to our current compensation program for non-employee directors, the aggregate number of shares of our common stock subject to awards that will automatically be granted on an annual basis to all of our current directors who are not executive officers as a group will be as follows: (i) with respect to such awards to be granted on the date of the Annual Meeting, such aggregate number will be 277,500 shares (which consists of a stock option and a restricted stock unit award, together equal to the stock option equivalent of 30,000 shares of our common stock, for each of our current non-employee directors, other than Mr. Myers (who was appointed to the Board on October 19, 2021 and, therefore, is only eligible to receive such awards with an aggregate value equal to the stock option equivalent of 22,500 shares of our common stock) and Ms. Sun (who was appointed to the Board on December 10, 2021 and, therefore, is only eligible to receive such awards with an aggregate value equal to the stock option equivalent of 15,000 shares of our common stock)); and (ii) with respect to such awards to be granted on the date of each annual meeting of stockholders after the Annual Meeting, such aggregate number will be 300,000 shares (which consists of a stock option and a restricted stock unit award, together equal to the stock option equivalent of 30,000 shares of our common stock, for each of our current non-employee directors). On and after the date of the Annual Meeting, any such stock options and restricted stock unit awards will be granted under the Amended 2018 EIP if this Proposal 2 is approved by our stockholders. For additional information regarding our current compensation program for non-employee directors, please see ''Director Compensation'' below.

Awards Granted under the 2018 EIP

The following table sets forth, for each of the individuals and various groups indicated, the total number of shares of our common stock subject to awards that have been granted under the 2018 EIP as of April 4, 2022.

2018 Equity Incentive Plan

Name and Position	Number of Shares
Ryan Spencer Chief Executive Officer and Director	1,585,550
David F. Novack President and Chief Operating Officer	992,000
Kelly MacDonald Senior Vice President and Chief Financial Officer	122,500
Michael S. Ostrach Former Senior Vice President, Chief Financial Officer and Chief Business Officer	385,000
Robert Janssen, M.D. Senior Vice President and Chief Medical Officer	506,000
All current executive officers as a group	3,206,050
All current directors who are not executive officers as a group	708,928
Each nominee for election as a director:	
Julie Eastland	75,000
Andrew Hack, M.D., Ph.D.	58,750
Brent MacGregor	75,000
Scott Myers	55,714
Elaine Sun	55,714
Each associate of any executive officers, current directors or director nominees	—
Each other person who received or is to receive 5% of awards	—
All employees, including all current officers who are not executive officers, as a group	8,593,840

Vote Required

The affirmative vote of the holders of a majority of shares present (either in person or by proxy) and entitled to vote on the matter at the Annual Meeting will be required to approve this Proposal 2. Abstentions will be counted toward the tabulation of votes cast on proposals presented to the stockholders and will have the same effect as negative votes. Broker non-votes are counted towards a quorum but are not counted for any purpose in determining whether this Proposal 2 has been approved.

THE BOARD OF DIRECTORS RECOMMENDS
A VOTE IN FAVOR OF PROPOSAL 2.

Equity Compensation Plan Information

The following table provides certain information about our equity compensation plans as of the fiscal year ended December 31, 2021.

Plan Category	Number of securities to be issued upon exercise of outstanding options, warrants and rights	Weighted-average exercise price of outstanding options, warrants and rights[3]	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in the first column)
Equity compensation plans approved by security holders:			
2011 Equity Incentive Plan	2,912,479	$18.66	—
2014 Employee Stock Purchase Plan[1]	—	$ —	1,038,313
2018 Equity Incentive Plan	5,273,049	$ 7.58	4,851,391
Equity compensation plans not approved by security holders:			
2017 Inducement Award Plan[2]	124,000	$17.55	—
2021 Inducement Award Plan[4]	2,088,800	$11.31	1,161,200[5]
Total:	10,398,328	$11.55	7,050,904

(1) As of December 31, 2021, an aggregate of 1,038,313 shares remained available for future issuance under the 2014 Employee Stock Purchase Plan, and as of April 4, 2022, up to a maximum of 956,312 shares may be purchased in the current purchase period.

(2) In order to induce qualified individuals to join our Company, on November 28, 2017, our Board adopted the 2017 Inducement Award Plan (the ''2017 Inducement Plan''), which provided for the issuance of up to 1,200,000 shares of Company common stock to new employees of the Company. Stockholder approval of the 2017 Inducement Plan was not required under Nasdaq Marketplace Rule 5635(c)(4). Upon the effectiveness of the 2018 Equity Incentive Plan, no additional awards were granted under the 2017 Inducement Plan. All shares currently subject to awards outstanding under the 2017 Inducement Plan, which awards expire or are forfeited, are included in the reserve for the 2018 Equity Incentive Plan to the extent such shares would otherwise return to such plan. Awards granted under the 2017 Inducement Plan have a term of 10 years. Exercisability, option price and other terms are determined by the plan administrator, but the option price cannot be less than 100% of fair market value of those shares on the date of grant. Stock options granted under the 2017 Inducement Plan generally vest over a period of four years, with the exception of performance-based awards which will vest upon achievement of certain performance conditions.

(3) 2,888,126 shares subject to restricted stock units (RSUs) were granted under the 2018 Equity Incentive Plan. Since these awards have no exercise price, they are not included in the weighted-average exercise price calculation.

(4) In January 2021, our Board adopted the 2021 Inducement Award Plan, under which we initially reserved 1,500,000 shares of common stock, and which we later approved to increase to an aggregate of 3,250,000 shares of common stock for issuance to be used exclusively for grants of awards to individuals who were not previously employees or directors of the Company. Stockholder approval of the 2021 Inducement Plan was not required under Nasdaq Marketplace Rule 5635(c)(4). The 2021 Inducement Plan provides for the issuance of NSOs, restricted stock awards, RSUs, stock appreciation rights, performance stock awards and other stock awards exclusively to individuals who were not previously employees or directors of the Company, or who had experienced a bona fide period of non-employment, as an inducement material to the individual's entry into employment with us within the meaning of Nasdaq Marketplace Rule 5635(c)(4). The terms of awards under the 2021 Inducement Plan are substantially similar to those of the 2018 Equity Incentive Plan, including the treatment of awards upon change in control transactions. As of December 31, 2021, options to purchase 2,088,800 shares were outstanding under the 2021 Inducement Plan. All options granted under the 2021 Plan have a maximum term of seven years. Awards under the 2021 Inducement Plan may be amended by the Board at any time or from time to time in accordance with the terms of the 2021 Inducement Plan and applicable law.

(5) The Board terminated the 2021 Inducement Plan effective as of April 3, 2022 and, therefore, there are no shares available for grant under the 2021 Inducement Plan as of such date.

PROPOSAL 3

ADVISORY VOTE ON EXECUTIVE COMPENSATION

Under the Dodd-Frank Wall Street Reform and Consumer Protection Act and Section 14A of the Exchange Act of 1934, Dynavax stockholders are being asked to approve, on an advisory basis, the compensation of our named executive officers as disclosed in this proxy statement, which is commonly referred to as a ''say-on-pay vote.'' This vote is not intended to address any specific item of compensation, but rather the overall compensation of our named executive officers, which results from our compensation philosophy, policies and practices as discussed in this proxy statement. The compensation of our named executive officers subject to the say-on-pay vote is described in the Compensation Discussion and Analysis, the accompanying tables, and the related narrative disclosure contained in this proxy statement.

Our Compensation Committee is responsible for designing and administering our executive compensation programs. Our Compensation Committee firmly believes that Dynavax's executive compensation programs should reward our named executive officers for performance, and that when key performance objectives are not achieved, the compensation of our named executive officers should reflect as much. We believe that the compensation of our named executive officers, as disclosed in this proxy, reflects this philosophy. In addition, our Compensation Committee believes that the compensation programs for our named executive officers have been instrumental in helping Dynavax be able to attract, retain and motivate our executive team, thereby enabling our company to be in a position to move forward with our business strategy.

Our Board is now asking our stockholders to indicate their support for the compensation of our named executive officers as described in this proxy statement by casting a non-binding advisory vote ''For'' the following resolution:

''RESOLVED, that the compensation paid to Dynavax's named executive officers, as disclosed pursuant to Item 402 of Regulation S-K, including the Compensation Discussion and Analysis, compensation tables and narrative discussion, is hereby APPROVED.''

Although this vote is advisory and the outcome is not binding on our Board, the views expressed by our stockholders, whether through this vote or otherwise, are important to us. As a result, the Board and the Compensation Committee will carefully review the results of this vote, and they will consider these results in making future decisions about our executive compensation programs and arrangements.

Unless our Board modifies its policy on the frequency of future advisory votes on the compensation of our named executive officers, which are currently submitted to stockholders on an annual basis, the next advisory vote on the compensation of our named executive officers will be held at the 2023 annual meeting of stockholders.

Vote Required

Approval of this advisory proposal requires the affirmative vote of the holders of a majority of shares present (either in person or by proxy) and entitled to vote on the matter at the Annual Meeting. Abstentions will be counted toward the tabulation of votes cast on proposals presented to the stockholders and will have the same effect as negative votes. Broker non-votes are counted towards a quorum but are not counted for any purpose in determining whether this Proposal 3 has been approved.

THE BOARD OF DIRECTORS RECOMMENDS
A VOTE IN FAVOR OF PROPOSAL 3.

PROPOSAL 4

RATIFICATION OF SELECTION OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Audit Committee has selected Ernst & Young LLP (''Ernst & Young''), as our independent registered public accounting firm for the fiscal year ending December 31, 2022. Ernst & Young has audited our financial statements since 2002. Representatives of Ernst & Young are expected to be present at the Annual Meeting. Ernst & Young will have an opportunity to make a statement if it so desires and will be available to respond to appropriate questions.

If the stockholders fail to ratify the selection of Ernst & Young, the Audit Committee will reconsider whether or not to retain that firm. Even if the selection 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 it determines that such a change would be in the best interests of the Company and its stockholders.

Vote Required

The affirmative vote of the holders of a majority of the shares present (either in person or by proxy) and entitled to vote on the matter at the Annual Meeting will be required to ratify the selection of Ernst & Young. Abstentions will be counted toward the tabulation of votes cast on proposals presented to the stockholders and will have the same effect as negative votes. Broker non-votes are counted towards a quorum but are not counted for any purpose in determining whether this matter has been approved; however, Proposal 4 is considered a ''routine'' matter, and therefore no broker non-votes are expected in connection with this Proposal 4.

THE BOARD OF DIRECTORS RECOMMENDS A VOTE IN FAVOR OF PROPOSAL 4.

AUDIT FEES

In connection with the audit of our 2022 financial statements, we entered into an engagement agreement with Ernst & Young which sets forth the terms by which Ernst & Young will perform audit services for us.

The following table represents aggregate fees billed to the Company for the fiscal years ended December 31, 2021 and 2020 by Ernst & Young, our principal auditors. The Audit Committee pre-approved all service fees described below.

	Fiscal Year Ended 2021	2020
Audit Fees[(1)]	$1,598,508	$1,729,615
Audit Related Fees	—	—
Tax Fees[(2)]	71,685	72,167
All Other Fees[(3)]	1,340	2,000
Total Fees	$1,671,533	$1,803,782

(1) Audit fees include fees for the audit of our consolidated financial statements and interim reviews of our quarterly financial statements, including compliance with the provisions of Section 404 of the Sarbanes-Oxley Act as well as fees related to registration statements, consents and other services related to SEC matters.

(2) Tax fees include Section 382 study and other tax advisory services.

(3) All other fees represent subscription fees for an online accounting research tool and related database.

PRE-APPROVAL POLICIES AND PROCEDURES

Our Audit Committee has adopted a policy and procedures for the pre-approval of audit and non-audit services rendered by our independent registered public accounting firm, Ernst & Young. Under the policy, the Audit Committee pre-approves specified services in the defined categories of audit services, audit-related services, tax services and all other services up to specified amounts. Pre-approval may be given as part of the Audit Committee's approval of the scope of the engagement of the independent registered public accounting firm or on an interim basis by the Audit Committee Chair, as needed and on a case-by-case basis before the independent registered public accounting firm is engaged to provide each service.

The Audit Committee has determined that services rendered by Ernst & Young are compatible with maintaining the principal auditors' independence.

EXECUTIVE OFFICERS

The following table sets forth certain information with respect to our executive officers as of April 4, 2022:

Name	Age	Position
Ryan Spencer[(1)]	44	Chief Executive Officer and Director
David F. Novack	60	President and Chief Operating Officer
Kelly MacDonald	38	Senior Vice President, Chief Financial Officer
Robert Janssen, M.D.	68	Chief Medical Officer and Senior Vice President, Clinical Development, Medical and Regulatory Affairs

(1) Please see ''Proposal 1 – Election of Directors'' in this proxy statement for more information about Mr. Spencer.

David F. Novack – President and Chief Operating Officer

Mr. Novack joined Dynavax in March 2013 as Senior Vice President, Operations and Quality, served as an interim co-President between May and December 2019, and has served as our President and Chief Operating Officer since December 2019. Mr. Novack was formerly with Novartis Vaccines & Diagnostics where he served since 2009 as the Global Head of Technical Operations for Diagnostics and previously from 2007 to 2009 as the Global Head of Vaccine Manufacturing Strategy. Prior to Novartis, Mr. Novack was the Vice President, Business Development for Vaxin, Inc., a vaccine company, from 2004 to 2006. From 1993 until 2004, Mr. Novack worked at MedImmune, formerly Aviron, serving in several capacities including business development, manufacturing, contract operations, and supply chain. Previously, from 1989 to 1993, Mr. Novack was with American Cyanamid Company in various roles. Mr. Novack received a B.S. in Biology from State University of New York and an M.B.A. from Columbia University.

Kelly MacDonald – Senior Vice President, Chief Financial Officer

Ms. MacDonald joined Dynavax in March 2021 as Senior Vice President, Chief Financial Officer, and Principal Financial Officer. Prior to Dynavax, Ms. MacDonald worked at Ironwood Pharmaceuticals, Inc. where she spent nearly eight years and held roles of increasing responsibility. In her final role at Ironwood Ms. MacDonald served as Chief Accounting Officer and Vice President, Finance where she led the Company's corporate accounting and finance processes, enterprise risk management, treasury and capital allocation strategy. While at Ironwood, she also had various other finance and accounting managerial roles where she provided financial advice on the company's strategic planning, accounting policies, R&D portfolio management, global business development, product launches and commercial execution. Prior to that, Ms. MacDonald spent nearly seven years at PriceWaterhouseCoopers, LLP, ultimately serving as a Manager in the Health Industries Assurance Practice, primarily serving clients in life sciences and technology sectors. Ms. Macdonald is a CPA and holds a Master of Business Administration from the Isenberg School of Management at the University of Massachusetts and a Bachelor of Science in Accounting from Fairfield University.

Robert Janssen, M.D. – Chief Medical Officer and Senior Vice President, Clinical Development, Medical and Regulatory Affairs

Dr. Janssen was appointed Chief Medical Officer and Senior Vice President, Clinical Development, Medical and Regulatory Affairs in January 2018. Dr. Janssen was appointed Chief Medical Officer and Vice President, Clinical Development and Regulatory Affairs in July 2013. He served as Dynavax's Vice President, Medical Affairs since November 2012 and was previously Senior Director, Clinical Development at Dynavax from 2010 through 2012, during which time he was extensively involved with Phase 3 clinical development of HEPLISAV-B and its U.S. and European licensing applications. Prior to joining Dynavax, Dr. Janssen was Vice President, Medical Affairs at Gilead from 2008 to 2010 where he was responsible for oversight of physician and health care provider education focused on HIV and hepatitis B therapies. Until 2008, Dr. Janssen spent 23 years at the U.S. Centers for Disease Control and Prevention (''CDC''), most recently as the Director of the Division of HIV/AIDS Prevention from 2000 to 2008. Under his leadership, the CDC first explored HIV treatment as a mode of HIV prevention and launched several of the earliest Phase 3 trials of pre-exposure prophylaxis for HIV. Dr. Janssen received a Bachelor of Arts degree with Honors in Humanities from Stanford University and his M.D. degree from the University of Southern California. He is a neurologist with training in virology received at the University of Pennsylvania. Dr. Janssen has been the beneficiary of numerous honors and awards during his career. He has published over 130 scientific articles in a variety of journals and has served as a reviewer for leading scientific journals.

COMPENSATION DISCUSSION AND ANALYSIS

Overview

This Compensation Discussion and Analysis discusses our executive compensation philosophy and practices and provides an overview of the Compensation Committee's 2021 decisions for the following named executive officers (''NEOs'') whose compensation is set forth in the Summary Compensation Table and other related tables contained in this proxy statement:

- Ryan Spencer, Chief Executive Officer and Director;
- David F. Novack, President and Chief Operating Officer;
- Kelly MacDonald, Senior Vice President, Chief Financial Officer[1]
- Michael S. Ostrach, former Senior Vice President, Chief Financial Officer and Chief Business Officer[2]; and
- Robert Janssen, M.D., Chief Medical Officer and Senior Vice President, Clinical Development, Medical and Regulatory Affairs.

Overview

We believe that 2021 was a transformational year for Dynavax. As the year started, the COVID-19 pandemic was still spreading rapidly and the first COVID-19 vaccines had only recently been approved in the U.S. with limited availability. With respect to adult hepatitis B vaccines in the U.S., including our product HEPLISAV-B, utilization was still well below rates seen before the pandemic in our estimation, and social distancing, remote work environments and other safeguards continued to present headwinds to direct sales efforts, compared to conditions that existed prior to the pandemic.

Recognizing that adult hepatitis B vaccine utilization would likely remain depressed during 2021, we focused our efforts on growing market share for HEPLISAV-B, in recognition that expanding our market share at times of low utilization could potentially reap amplified benefits if and when utilization returned to more normal levels. In addition to our focus on expanding our share of the then-current market, we undertook further efforts to help achieve a favorable recommendation at the ACIP.

In anticipation of an expanded recommendation by the CDC Advisory Committee on Immunization Practices (''ACIP''), and the market expansion that we expected would follow, we reorganized our sales to team during the summer of 2021 to prepare for the recommendation and we added approximately 35 additional field sales positions who were directly focused on HEPLISAV-B sales efforts. We also made substantial investments in our Dusseldorf facility to expand operations and increase yields in our antigen manufacturing operations, which we believed would increase our output and decrease or cost per dose by utilizing more efficient processes.

In November of 2021 the ACIP provided a universal recommendation that all adults aged 19-59 should be vaccinated against hepatitis B. We believe that the ACIP's universal recommendation expanded the market for people who should be vaccinated against hepatitis B by shifting from a more complicated risk-based approach to a simpler age-based recommendation that expanded the overall pool of persons who should be vaccinated and also made patient identification and prescribing practices easier.

In parallel, to better support our collaboration partners focused on developing COVID-19 vaccines, we undertook to bring up a second supplier of CpG 1018 adjuvant, and we now have two qualified suppliers to help support our COVID-19 vaccine supply business. Building on the efforts undertaken in 2020 to establish COVID-19 adjuvant supply relationships, we saw two of our collaboration partners receive emergency use authorizations for their COVID-19 vaccines, and two more are working to achieve emergency use authorizations. Sales to these partners generated significant revenue and cash in 2021, and we finished the year with a strong balance sheet.

In addition to adding significant cash reserves, we further strengthened our financial position by refinancing our outstanding term loan and replacing it with lower-interest convertible debt which we believe will save approximately $7 million dollars per year in interest expense.

(1) Ms. MacDonald joined Dynavax in March 2021.

(2) Mr. Ostrach retired from Dynavax in April 2021.

Key 2021 Highlights and Performance Against Core Priorities

During 2021, our business strategy focused on three key pillars to advance our business: (i) continued commercialization and market share expansion to drive growth for HEPLISAV-B in the U.S., (ii) advancing our CpG 1018 adjuvant supply strategy for COVID-19 vaccines and (iii) building an innovative clinical pipeline leveraging our proven adjuvant technology while strengthening our financial profile. A summary of our accomplishments against these pillars during 2021 and early 2022 to help create this long-term value appears below:

Maximize Growth of HEPLISAV-B [Hepatitis B Vaccine (Recombinant), Adjuvanted]

- We recognized approximately $61.9 million in product revenue related to sales of HEPLISAV-B in the U.S. during the year ended December 31, 2021, representing a 72% increase compared to the year ended December 31, 2020, despite COVID-19 headwinds.
- In April 2021, we announced the results of the post-marketing study assessing the rates of occurrence of acute myocardial infarction (“AMI”) in persons receiving HEPLISAV-B compared with Engerix-B, showing evidence there is no increased risk of AMI associated with vaccination with HEPLISAV-B compared to Engerix-B.
- In November 2021, the ACIP recommended that all adults aged 19-59 be vaccinated against hepatitis-B. This universal recommendation created a significantly expanded market opportunity in the U.S., compared to the more limited prior recommendation to vaccinate at-risk populations, which we believe has greatly simplified prescribing practices.

Expand CpG 1018 Adjuvant Supply Business for COVID-19 Vaccines

- We recognized approximately $375.2 million in product revenue related to sales of CpG 1018 adjuvant to our global portfolio of partners developing COVID-19 vaccines during the year ended December 31, 2021, compared to just $3.3 million in 2020.
- Two of our adjuvant collaborators’ COVID-19 vaccine candidates, utilizing our CpG 1018 adjuvant, were approved for emergency use during the year ended December 31, 2021; additional collaborators’ successful Phase 3 clinical data consistently demonstrated the value of CpG 1018 adjuvant across multiple vaccine platforms.
- We continued to expand our manufacturing capacity to meet our partners’ needs for adjuvant in 2022 and beyond.

Drive Innovation Through Clinical Pipeline Expansion and Discovery

- We continued enrollment and made progress on our Tdap-1018 Phase 1 clinical trial evaluating the safety, tolerability, and immunogenicity of the vaccine, with topline data in adults and adolescents expected during 2022.
- In September 2021, we entered into a fully-funded collaboration with the U.S. Department of Defense to conduct a Phase 2 clinical trial for a plague vaccine utilizing our CpG 1018 adjuvant, which is expected to start in 2022.
- During 2021, we further invested in our pre-clinical and clinical collaborations and discovery efforts, including our ongoing collaboration with Mount Sinai investigating universal and seasonal influenza.
- In January 2022, we announced the initiation of a Phase 1 clinical trial evaluating the safety, tolerability, and immunogenicity of our investigational shingles vaccine program utilizing our CpG 1018 adjuvant.

Corporate and Financial Highlights

- We delivered net income of $76.7 million during the year ended December 31, 2021, representing our first full year of profitability in company history;
- We generated $335.5 million in positive cash flow from operations during the year ended December 31, 2021, and ended the year with $546.0 million in cash, cash equivalents and marketable securities;

- In May 2021, we increased the funding under our arrangement with Coalition for Epidemic Preparedness Innovations (‘‘CEPI’’) to approximately $176.4 million, which supported the advance manufacturing cost of CpG 1018 adjuvant sold to or reserved for certain of our collaborators working to advance COVID-19 vaccine candidates utilizing our CpG 1018 adjuvant.
- We added two additional directors with deep financial and industry experience that we believe can help future strategy and execution as we invest in future growth. We also strengthened our management and clinical teams, which we believe will provide a strong foundation for future operations.
- Our stock price increased by 187% during the year, from a closing price of $4.90 on the Nasdaq Stock Market on December 31, 2020 to a closing price of $14.07 on December 31, 2021.

Compensation Governance Highlights

What we do		What we do not do	
☑	Design executive compensation program to align pay with performance	☒	No excessive change in control or severance payments (no cash severance multiplier greater than 1.75x base + target bonus); no single trigger change in control cash payments
☑	Prohibit hedging and pledging by executive officers and directors	☒	No repricing of underwater stock options without stockholder approval
☑	Grant equity awards with performance-based vesting	☒	No tax gross-ups
☑	Conduct an annual say-on-pay vote	☒	No excessive perquisites
☑	Seek input from, listen to and respond to stockholders	☒	No guaranteed bonuses

Consideration of Our Prior Say-on-Pay Votes and Related Stockholder Engagement

In 2016, our Board of Directors adopted, and our stockholders approved, a policy that we would hold a say-on-pay vote on a yearly basis. Since adjusting to an annual say-on-pay practice, we have experienced continued favorable voting results with our say-on-pay practices. The results of the past three years’ voting have been 75%, 92%, and 95% in fiscal years 2019, 2020, and 2021, respectively, of stockholders voting in favor of our pay practices.

We routinely seek and obtain feedback from our stockholders throughout the course of the year. In addition, we seek feedback from the governance teams of our largest institutional stockholders each year pertaining to executive compensation as well as other topics of interest to them. In early 2022, we reached out to engage with the governance teams of our 22 largest investors, representing approximately 63% of our shares outstanding. We spoke with 100% of the stockholders that wanted to provide us with feedback at that time about our executive compensation practices or other governance practices. During these discussions, which included an opportunity for detailed questions, none of our stockholders expressed any concerns about our executive compensation practices. Additionally, we considered feedback from Institutional Shareholder Services and Glass Lewis, as well as the voting results of the prior year’s say-on-pay proposal. Accordingly, we determined not to make any significant changes to our executive compensation policies or decisions as a result of our say-on-pay vote and stockholder feedback; however, we will monitor and continually evaluate our compensation program going forward in light of our stockholders’ views and our transforming business needs.

Executive Compensation Philosophy and Objectives

We believe our NEOs’ compensation should align our executives’ interests with that of our stockholders over the long-term through achievement of strategic corporate objectives that are fundamental to our business and that are intended to create long-term stockholder value. Our executive compensation programs are designed to be competitive with our peer group to enable us to attract, motivate, reward, and retain outstanding talent. Our compensation programs are based on the following key principles:

- Link a direct and meaningful proportion of pay with performance and achievement of corporate and individual goals;
- Clearly align our executives’ interests with those of our stockholders through equity compensation;

- Achieve a mix of overall compensation that is competitive in the industry in which we compete for executive talent; and
- Recognize individual contributions, teamwork and corporate performance.

Compensation-Setting Process

Role of the Compensation Committee and Management

The Compensation Committee oversees and administers our executive compensation programs. The Compensation Committee acts pursuant to a charter adopted by our Board, which can be found at our website, www.dynavax.com. The Compensation Committee generally determines the compensation to be paid to the executive officers, including our NEOs. Either the Compensation Committee or the independent members of our Board, upon recommendation from the Compensation Committee, approve certain compensation of our CEO, and references in this Compensation Discussion and Analysis to our Board approving our CEO's compensation refer to the independent members of our Board.

The Compensation Committee (and the Board, with respect to our CEO) approves our corporate goals and the individual goals of our NEOs after considering the Company's recommendations on these matters. The Compensation Committee annually reviews the base salaries, cash incentives and equity compensation of our NEOs and periodically reviews other elements of our compensation. Compensation decisions are based primarily on the following:

- *Peer and Industry Data* – The Compensation Committee uses peer and industry data provided by its consultant, Arnosti Consulting Inc. (''Arnosti''), as a reference in setting base salaries and target cash compensation, determining appropriate levels and mix of equity compensation and determining the type and portion of compensation tied to performance goals.
- *Annual Performance Reviews* – The Chair of the Compensation Committee conducts annual performance reviews of our CEO taking into consideration feedback obtained during the course of the year from the independent members of our Board and the CEO's direct reports. Our CEO conducts and presents the performance reviews of the other NEOs to the Compensation Committee after the end of each fiscal year. In reviewing and determining the compensation of each NEO, the Compensation Committee also considers individual factors, such as potential for future contributions to Company growth, industry experience and retention concerns.
- *CEO Recommendations* – The Compensation Committee seeks input from our CEO for setting the salary and target cash compensation levels for the other NEOs, and also for purposes of setting annual performance metrics and target amounts under our annual incentive program.

Role of Compensation Consultant

Arnosti has been the Compensation Committee's independent compensation consultant since 2010, and the Compensation Committee meets regularly with Arnosti, both with and without management present, depending upon the topic being discussed.

During the first quarter of 2021, the Compensation Committee reviewed whether the work of Arnosti as a compensation consultant raised any conflict of interest, taking into consideration the following factors:

- The provision of other services to the Company;
- The amount of fees paid to Arnosti by the Company relative to Arnosti total revenue;
- Arnosti's policies and procedures that are designed to prevent conflicts of interest;
- Any business or personal relationship of Arnosti or the individual compensation advisors employed by Arnosti with a member of the Compensation Committee, or with an executive officer of the Company; and
- Any Company stock owned by Arnosti or the individual compensation advisors contracted by Arnosti.

Based on the Compensation Committee's review of this information, it determined the work of Arnosti and the individual compensation advisors contracted by Arnosti as compensation consultant to the Compensation

Committee, did not create any conflict of interest. The Compensation Committee has the sole authority to direct, terminate or continue Arnosti's services, although the Company pays the cost for Arnosti's services.

In 2021, Arnosti provided advice to the Compensation Committee on several different aspects of its responsibilities related to our compensation programs and practices. Specifically, during 2021, Arnosti assisted the Compensation Committee as follows:

- Provided recommendations to the Compensation Committee on refining our peer group;
- Provided general information concerning executive compensation trends and developments;
- Reviewed and analyzed compensation levels of our NEOs in comparison to those of our peer companies;
- Provided the Board with a review of competitive data from the peer group on Board compensation; and
- Reviewed the Compensation Discussion and Analysis for inclusion in our proxy statement.

2021 Peer Group and Use of Market Data

Our Compensation Committee primarily uses relevant publicly disclosed market data for a general understanding of executive market compensation practices and our positioning within the market, including within our peer group. Our Compensation Committee believes that over-reliance on benchmarking could result in compensation that is unrelated to the value delivered by the NEOs because compensation benchmarking does not take the specific performance of the NEOs, or the performance of the Company in its unique circumstances, into account.

Our Compensation Committee does not have a specific target compensation level for the NEOs or otherwise use a formulaic approach to setting pay at a particular positioning within the market data; rather, the Compensation Committee reviews a range of market data reference points including relevant Radford Global Life Sciences survey data as well as data from the Company's peer group with respect to total target cash compensation (including both base salary and the annual target performance bonus) and equity compensation (valued based on disclosed grant date fair value and also considered as shares as a percentage of total common shares outstanding) to support its compensation decisions.

For 2021, our Compensation Committee approved a peer group of biotechnology companies at a similar stage of their life-cycle with which we compete for executive talent that were of similar size to the Company in terms of market capitalization (targeting .3x to 3x our own market capitalization, with some exceptions for companies it felt were nonetheless good comparators), product portfolio, pipeline and number of employees. To align with our strategic plan at that time, which included commercialization of HEPLISAV-B in the U.S. and Europe, our peer group included companies that:

- Were commercial-stage companies having already filed for an investigational new drug;
- Were pure-play vaccine developers; and
- Had their own manufacturing operations, where possible.

The change in our peer group from 2020 to 2021 included removing 2 companies for various reasons including market caps that were out of range or because such companies were not yet in, or not very close to, commercial stage. The companies that were removed were Acorda Therapeutics, Inc. and Five Prime Therapeutics, Inc. The following 3 companies were added to the peer group: Aerie Pharmaceuticals, Inc., Corcept Therapeuitcs, Inc. and Zogenix, Inc. As of August 2020, the point at which the Compensation Committee approved the 2021 peer group, the companies in the 2021 peer group had market capitalizations ranging between $73.5 million to $7.1 billion, and the median market capitalization of our peer group was $1.145 billion. At the same point in time, our market capitalization was $1.096 billion. The following table lists our 2021 peer group:

- Adamas Pharmaceuticals Inc.
- Aerie Pharmaceuticals, Inc.
- Akebia Therapeutics, Inc.
- AMAG Pharmaceuticals, Inc.
- Ardelyx, Inc.
- Biocryst Pharmaceuticals, Inc.
- ChemoCentryx, Inc.
- Clovis Oncology, Inc.
- Corcept Therapeutics, Inc.
- Eagle Pharmaceuticals, Inc.
- Heron Therapeutics, Inc.
- Immunogen, Inc.

- Karyopharm Therapeutics, Inc.
- Macrogenics, Inc.
- Momenta Pharmaceuticals, Inc.
- Novavax, Inc.
- Portola Pharmaceuticals, Inc.
- Puma Biotechnology, Inc.
- Retrophin, Inc.
- Rigel Pharmaceuticals, Inc.
- Theravance Biopharma, Inc.
- Zogenix, Inc.

Elements of Executive Compensation

Our executive team continues to manage a changing and increasingly complex business. We strive to recognize these efforts by compensating our NEOs for the demands and risks associated with our business through three primary elements that are designed to reward performance in a simple and straightforward manner – base salaries, annual performance-based cash incentives and long-term equity incentive awards.

During our annual stockholder outreach in recent years, including in 2021 and in early 2022, our key stockholders did not express any concerns over the elements of our executive compensation program, including our use of a mix of time-based stock options and performance-based RSUs. In 2021, our performance-based RSUs once again included meaningful performance goals that must be met within a designated performance period in order for any vesting or payout to occur. In 2021 we also introduced time-based RSUs as part of our compensation mix. As reflected in the chart below, we continued to utilize performance-based vesting for a portion of our long-term equity incentive awards in 2021.

The table below summarizes the purpose and key characteristics of each of our compensation elements.

Element	Purpose	Key Characteristics
Base Salary	Provides a fixed level of compensation for performing the essential elements of the job; gives executives a degree of certainty in light of having a majority of their total compensation at risk.	Fixed compensation that is reviewed annually and adjusted if and when appropriate; reflects each NEO's performance, experience, skills, level of responsibility and the breadth, scope and complexity of the position as well as the competitive marketplace for executive talent specific to our industry.
Annual Cash Incentive Program	Motivates executive officers to achieve corporate and, as applicable, individual business goals, which we believe increase stockholder value, while providing flexibility to respond to opportunities and changing market conditions.	Annual cash incentive based on corporate performance, and, as applicable, individual performance compared to pre-established goals. For 2021, each of our Chief Executive Officer's and President and Chief Operating Officer's annual incentive was based on corporate goals only. Corporate goals focus on overarching objectives for the Company which we believe support long-term value, while individual objectives are aligned to corporate objectives and other strategic priorities of the Company. Corporate goals are aligned with our business strategy and weighted by relative importance so that overall corporate achievement can be objectively measured.
Long-Term Equity Incentive Awards (Stock Options)	Motivates executive officers to achieve our business objectives by tying incentives to the appreciation of our common stock over the long term.	Stock options are granted with an exercise price equal to the fair market value on the date of grant vesting over three years; the ultimate value realized, if any, depends on the appreciation of our common stock price following grant. If our stock price does not

Element	Purpose	Key Characteristics
		appreciate, there is no value realized. In determining the aggregate size of equity grants in any given year, the Compensation Committee generally considers the same factors described above under ‘‘Base Salaries’’ as well as the criticality of the executive to the long-term achievement of corporate goals. In 2021, we targeted roughly 50% of our NEO’s annual equity grant value to be time-based options. From time to time, we may also use special grants of stock options to encourage retention or for other purposes as determined by the Board. No such special stock options were granted to NEOs in 2021.
Long-Term Equity Incentives (RSUs)	Motivates executive officers to achieve our corporate objectives by tying compensation to the performance of our common stock over the long term; provides motivation for our executive officers to remain with the Company by mitigating near-term swings in incentive values during periods when market volatility weighs on our stock price.	Restricted stock unit awards may vest based on continued service over a specified period of time and/or achievement of performance goals; the ultimate value realized varies with our common stock price. During 2021 we granted time-based and performance-based RSUs to NEOs. In 2021, we targeted roughly 25% of our NEO’s annual equity grant value to be time-based RSUs, and 25% to be performance-based RSU awards. Time-based RSUs generally vest in three annual installments on each anniversary of the grant date and performance-based RSUs generally vest upon the Compensation Committee’s certification of achievement of pre-established performance goals over performance periods as discussed below. From time to time, we may also use special RSU awards to encourage retention or for other purposes as determined by the Board. No such special RSUs were granted to NEOs in 2021.
Other Compensation	Our executive officers generally participate in the same benefits offered to all other employees, which promote employee health and welfare and assist in attracting and retaining our executive officers.	Indirect compensation element consisting of programs such as medical, vision, dental, life and accidental death, long-term care and disability insurance as well as a 401(k) plan with a Company matching contribution, and other plans and programs made available to all regular full-time employees. In addition, we provide our executive officers with supplemental long-term

Element	Purpose	Key Characteristics
		disability insurance benefits which we believe are reasonable in amount and customary in our industry.
Severance and Change in Control Benefits	Serves our retention objectives by helping our named executive officers maintain continued focus and dedication to their responsibilities to maximize stockholder value, including in the event of a transaction that could result in a change in control of our Company.	Provides protection in the event of a termination of employment under specified circumstances, including following a change in control of our Company as described below under ''Potential Payments Upon Change in Control or Involuntary Termination.''

2021 Executive Compensation Decisions

Total Target Cash Compensation – Base Salaries and Target Bonus Percentages

When determining 2021 base salary and target bonus percentage adjustments, the Compensation Committee considered each individual's performance and criticality, each individual's industry experience and tenure, internal pay equity, and retention concerns. The Compensation Committee also reviewed a range of market data reference points with respect to total target cash compensation (including both base salary and the annual target performance bonus).

In the early part of 2021, the Compensation Committee (and the Board with respect to Mr. Spencer) evaluated the 2020 compensation of each of our then-serving NEOs and approved base salary increases as shown in the table below and a target bonus increase for Mr. Spencer (increased from 60% to 70% of base salary) and Mr. Novack (increased from 55% to 60% of base salary).

Unless otherwise noted below, the target bonuses and 2021 base salaries were effective as of January 1, 2021.

The Compensation Committee, and the Board, with respect to Mr. Spencer, determined the base salary, target bonus and resulting 2021 total target cash compensation for each NEO in its discretion. In determining NEO total compensation and the components thereof, the Compensation Committee, and in the case of Mr. Spencer, the Board, considers disclosed peer group and survey data; each NEO's industry experience, expertise, and tenure with the Company; internal pay equity; and the Company's annual salary budget. The increases in total target cash that the Compensation Committee (and the Board with respect to Mr. Spencer) approved varied in amounts for each NEO, based on individual considerations for each NEO applying the factors listed above and the resulting amounts that the Compensation Committee (and the Board with respect to Mr. Spencer) felt was appropriate in order to provide adequate retentive and incentive value to each NEO. For Mr. Spencer, the Compensation Committee and the Board approved the 23.8% increase in total target cash compensation primarily due to its desire to move his target cash compensation closer to the 25th percentile relative to other CEOs at peer companies. For Ms. MacDonald, the Compensation Committee determined her base salary and target bonus in connection with her commencement of employment with us based on the general factors described above for the other NEOs and the amount it felt necessary and appropriate to serve as an inducement to recruit and retain her in her role as Senior Vice President, Chief Financial Officer.

Name	2021 Base Salary	% Increase from Prior Year Salary	2021 Target Bonus	% Increase from Prior Year Total Cash Target
Ryan Spencer	$600,000	16.5%	70%	23.8%
David F. Novack	$519,750	5%	60%	8.4%
Kelly MacDonald	$375,000	0%(1)	50%	0%(1)
Michael S. Ostrach	$478,330(2)	3%	50%	3.0%
Robert Janssen, M.D.	$480,938	3%	50%	3.0%

(1) Ms. MacDonald joined the Company during 2021; Ms. MacDonald's 2021 base salary and 2021 target bonus were determined in connection with her hire and effective for the portion of 2021 during which she was employed with us.

(2) Mr. Ostrach retired from the Company on April 1, 2021 and as a result, ceased receiving 2021 base salary payments as of his retirement, and was not eligible for, and did not receive, an annual incentive award pursuant to our annual cash incentive plan for 2021. Mr. Ostrach's retirement benefits are discussed further in the section entitled ''Involuntary Termination'' below.

2021 Annual Cash Incentive – Structure, Goals and Payout Decision

Structure. Neither Mr. Spencer nor Mr. Novack carried individual goals separate from the Company's corporate objectives for 2021. We believe that this aligned their incentive compensation fully with the completion of corporate goals that measure business performance and are intended to drive long term stockholder value. For our other NEOs, their annual cash incentive payout is typically based on the achievement of pre-established corporate and individual goals. Our Chief Executive Officer typically recommends individual goals for each of the other NEOs, which are aligned with our business strategy and linked with corporate goals, and our Compensation Committee approves these goals. The individual goals for the NEOs are in addition to the general responsibilities each officer has for managing his or her respective functional or operational area. In early 2021, the Compensation Committee established corporate and, for NEOs other than Messrs. Spencer and Novack, individual goals to align NEO annual cash incentive compensation with respective performance toward these goals. For 2021, Ms. MacDonald's and Dr. Janssen's respective annual cash incentive opportunity was based on a weighting of 80% corporate and 20% individual goals. Due to Mr. Ostrach's retirement in April 2021, he was not eligible for incentive pay for 2021.

Our corporate goal set included base goals and stretch goals. Base goals in the aggregate were set to be appropriately difficult to require substantial effort during the year to help create long-term value and to advance our business in the best interests of stockholders. The base goals were designed to represent, if fully achieved, what would be in our view a very successful year for the Company. We also provided stretch goals as an additional incentive for over-achievement. The stretch goals, if achieved, were intended to provide additive amounts to increase the total bonus opportunity to beyond the base target of 100% to appropriately reward value creation beyond our base target set. The base goals and the stretch goals were all set at the same time, in early 2021. The maximum possible payout was subject to a cap of 175% of each individual's target bonus, pursuant to the terms of our bonus plan. Importantly, we did not make any adjustments to our goals during 2021, due to complications arising from the COVID-19 pandemic, or otherwise. All goals, stretch goals included, were set at the same time and were tied to specific performance metrics. No purely discretionary bonuses or accelerators were provided as part of the 2021 bonus program.

Because we are a fully-integrated biopharmaceutical company with a marketed product and ongoing vaccine development program, our corporate goals were directly aligned with specific strategic objectives with an eye toward matters that management could influence or control. We believe that our focus on these goals, and our respective performance in pursuing them, properly aligned management's interests with those of our shareholders and helped to increase shareholder value.

In February 2022, the Compensation Committee evaluated the accomplishments and performance of the Company against these pre-established corporate goals. With respect to each of the categories of corporate goals below, the Compensation Committee took into consideration each of the goals identified and the level of completion in making an overall determination of goal achievement for each category.

2021 Corporate Goals and Achievements. For 2021, our corporate strategy focused on three key pillars: (i) continued commercialization and market share expansion to drive growth for HEPLISAV-B in the U.S., (ii) advancing our CpG 1018 adjuvant supply strategy for COVID-19 vaccines and (iii) building an innovative clinical pipeline leveraging our proven adjuvant technology. Accordingly, our corporate goals were designed to further build on these three pillars of our strategy, and to strengthen our overall financial position. After its consideration of the Company's performance, as more specifically described in the following chart, the Compensation Committee rated our overall 2021 corporate achievement at 140%.

Corporate Goal	Weight*	Corporate Achievement	Corporate Achievement Percentage	Overall Weighted Achievement
Advance HEPLISAV-B Sales • Achieve $60-65 million in HEPLISAV-B full-year net sales (25%). • Achieve 35% market share in field targeted accounts, or those customers that we	40%	The Compensation Committee determined that we achieved the goals in this category at an overall percentage of 96%. In determining this percentage, the Compensation Committee considered several factors, including:	96%	38%

Corporate Goal	Weight*	Corporate Achievement	Corporate Achievement Percentage	Overall Weighted Achievement
believe represent, in the aggregate, approximately 60% of hepatitis B vaccine doses administered in the U.S. (15%).		• HEPLISAV-B net sales of $62 million (a 72% increase over prior year) despite overall reduced vaccine utilization compared to pre-pandemic levels. • 34% field targeted market share achieved, representing considerable growth versus 26% in 2020, despite COVID headwinds.		
Ensure long-term growth of HEPLISAV-B sales in the U.S. • Stay on track to achieve policy goals for 2021 – ACIP universal recommendation (10%). ○ Stretch:preferential language included as part of universal recommendation (+10%). • Work to create further future growth opportunities by way of a beneficial recommendation from the ACIP and/or filing a Dialysis sBLA. Meet with FDA regarding Dialysis sBLA, close out HBV-24 activities, prepare CSR in 2021 (10%) ○ Stretch: File dialysis sBLA in 2021 based on negotiations with FDA to accept preliminary safety data in initial filing. sBLA means the supplemental biologics license application to be submitted to the FDA to permit the licensure to manufacture a product using the given manufacturing process. (+5%)	20%	The Compensation Committee determined that we achieved the goal in this category at an overall percentage of 75%. In determining this percentage, the Compensation Committee considered several factors, including: • ACIP universal recommendation was fully achieved, albeit without preferential language. • Dialysis goal was credited 50% for progress made.	75%	15%
Drive Long-Term Growth of Our Vaccine Business • Complete Adjuvanted Tdap Phase 1 last patient out in	30%	The Compensation Committee determined that we achieved the goal in this category at an overall percentage of 108%. In	108%	32%

Corporate Goal	Weight*	Corporate Achievement	Corporate Achievement Percentage	Overall Weighted Achievement
2021 and initiate challenge study (10%) • Formally advance a new vaccine development candidate (5%) ○ Stretch: Advance or acquire a vaccine product candidate that will be phase 2 ready in 2022 (+5%) ○ Stretch: Acquire a phase 3 program or an approved vaccine (+10%) • CpG 1018 adjuvant to be included in at least one commercially available COVID-19 vaccine (10%). ○ Stretch: CpG 1018 adjuvant included in a second commercially available vaccine (+5%): • Execute HEPLISAV-B commercial collaboration in Europe; out-license in additional territory (5%).		determining this percentage, the Compensation Committee considered several factors, including • Tdap Phase 1 progressed, but last patient out was delayed to first quarter 2022 due to COVID impact on enrollment; challenge study was initiated. • Shingles program was advanced for clinical development and the first stretch goal was achieved with plague program contract, expected to begin Phase 2 trials during 2022. • Credited 150% for including CpG 1018 adjuvant in two commercially available vaccines produced by Medigen and Bio E. • HEPLISAV-B goal credited 50% for completing Bavarian Nordic agreement for Europe, but no second territory covered.		
Strengthen our financial position and organization • End 2021 with specified cash and equivalents based on approved plan (5%). • Increase organizational strength and capabilities through the completion of succession plans for Sr. Director level and above, and create individual development plans for all people leaders (5%). • Stretch: Refinance or replace outstanding term loan debt on favorable terms. (+5%) • Super Stretch Goal: Generate total revenue of more than $300 million in 2021 (+25%).	10%	The Compensation Committee determined that we achieved the goal in this category at an overall percentage of 137%. In determining this percentage, the Compensation Committee considered several factors, including: • Cash and equivalents exceeded the goal significantly. • Refinanced term loan debt favorably. • Total revenue of $439 million far exceeded goal of $300 million. • Significantly strengthened technical, clinical and administrative functions through key hires. • Succession plans developed to provide retention with clear career paths.	137%	14%

Corporate Goal	Weight*	Corporate Achievement	Corporate Achievement Percentage	Overall Weighted Achievement
Additive Stretch Goals Achieved and Credited • Plague Program (+5%) • Revenue Achievement of $427 million (+25%)		The Compensation Committee determined that achievement of the pre-determined stretch goals (i) for the contract for the plague program would add 5% above the base target and (ii) the revenue achievement well in excess of the pre-set revenue goal would add 36% above the base target.		+41%
Total	**100%**			**140%**

* percentages in this column represent target base goals, and do not include amounts attributable to stretch goals.

2021 Individual Goals. As described above, Messrs. Spencer and Novack did not have individual goals, and their respective incentive compensation was based solely on achievement of our corporate goals.

At the beginning of each year, our Chief Executive Officer typically recommends individual goals for each the remaining NEOs, which are aligned with our business strategy and linked to corporate goals, and our Compensation Committee approves these goals. The individual goals for our NEOs include critical responsibilities that each NEO has that go beyond the corporate goals and are significant to our success. Established in May 2021, the 2021 individual goals for the NEOs named below focused on objectives linked to their functional expertise and responsibility as well as our then-current business strategy. These specific goals were in addition to the general responsibilities each NEO had for managing his or her respective functional operational area, including through the period of significant change as we continued to adapt to the pandemic, engaging a nearly fully-remote workforce and scaling our business to help support COVID-19 pandemic-level adjuvant supply. As mentioned, due to Mr. Ostrach's retirement in April 2021, he was not eligible for incentive compensation for 2021, so there are no individual goals reported for him below.

While individual goals and performance results relate to advancing our corporate goals and business strategy, the Compensation Committee structures individual goals to be targeted to each applicable NEO's expertise and responsibility and evaluates achievement based on each applicable NEO's individual efforts and performance results. Thus, as is the case with respect to the 2021 goals, there will be circumstances where the individual goal achievement may exceed corporate goal achievement, and there will be instances where the corporate goal achievement may surpass the individual goal grading. In February 2022, based on the recommendation of Mr. Spencer, as well as the observations by Compensation Committee members of these officers and its own assessment of each NEO's effectiveness, the Compensation Committee determined the level of achievement of each NEO's 2021 individual goals as follows:

Name	Individual Goals	Individual Achievement	Individual Achievement Percentage
Kelly MacDonald	Deliver cash and financial metrics set forth in Board-approved Operating Plan, ensuring adherence to all SEC and Sarbanes-Oxley Act ("SOX") compliance requirements (20%): • End 2021 with at least 24 months cash based on approved plan • External Reporting: Prepare high-quality SEC filings without significant deficiencies or material weakness • ERM: Establish Enterprise Risk Management program in the second half of 2021 • SOX: Prioritize process simplification to decrease financial close cycle time from	Met all goals, and exceeded goals for the year, as follows: • Exceeded all aspects of her goal to deliver cash and financial metrics set forth in the Board-approved Operating Plan, ensuring adherence to all SEC and SOX compliance requirements • Filings produced timely with no reported deficiencies	150%

Name	Individual Goals	Individual Achievement	Individual Achievement Percentage
	10 to 7 (or fewer) days • Tax Strategy: Prepare roadmap and tax strategy to protect net operation losses and research and development credits, complete 382 assessment Tax and Financial Health (20%): • Establish, ex-US tax considerations in connection with the transition to profitability and increased ex-US-related economics. • Complete a structured review of available options to strengthen balance sheet, improve cost of capital and make recommendations to the Board or committee thereof in first half of 2021 Improve our financial performance monitoring capabilities at the enterprise leadership level and support decision-making (20%): • Establish quarterly reporting to management focusing on risks/opportunities and tracking vs. Operating Plan and forecast • Report risks/opportunities vs Operating Plan to Audit Committee quarterly • Improve enterprise-wide financial acumen through cost center budget reporting, long-range plan process and routine finance business partner meetings Serve as enterprise leader; support strategic framework to drive long term value (20%): • Prepare and present valuation modeling, develop a disciplined approach to capital allocation, investing in opportunities to grow the business through organic and, as applicable, inorganic investment opportunities to drive long-term value and support return on investment analysis on HEPLISAV-B marketing mix and salesforce investment (with advisor) • Increase organizational strength within finance (20%): • Develop integrated talent and capability plans for our finance team. • Actively support equality, diversity, inclusion initiatives, in collaboration with human resources business partners. • Strengthen interpersonal collaboration and connectivity for team, especially while we remain a disparate workforce	• Close process reduced by 3 days, allowing greater time for review • Improved tax strategy and enhanced tax function • Successful debt refinancing and expansion of banking relationships and enhanced analyst coverage of our stock • Substantial contribution to efforts centered around diversity, equity and inclusion	

Name	Individual Goals	Individual Achievement	Individual Achievement Percentage
Robert Janssen, M.D.	Ensure long-term growth of HEPLISAV-B (50%) • Support policy plan to facilitate ACIP decision-making for universal adult hepatitis-B vaccination • Medical affairs engagement to ensure HEPLISAV-B is appropriately represented by key opinion leaders and in government and society guidelines to support continued product expansion • Update CDC Pink sheets to include 2 dose adult hepatitis B schedule • Update the hepatitis B guidelines for the National Kidney Foundation and American Diabetes Association to include 2 dose regimen • Implement a defined plan for key opinion leader and society goals, activities, and measurement • Develop optimal dialysis US regulatory filing strategy and prepare sBLA for filing by February 2022 Drive the long-term growth of our vaccine business (30%) • Complete Tdap-1018 Phase 1 study with last patient out in 2021 • Develop human challenge for TdaP-1018 vaccine for initiation of a clinical trial in Q4 2021/Q1 2022 in acellular pertussis primed adults • Determine regulatory pathway through meeting with regulators to enable phase 1 clinical trial initiation in Q4 2021 for Zoster-1018 vaccine • Identify options to address combo hepatitis A/B competition through new product development or clinical data with monovalent hepatitis A Strengthen organization (20%) • Hire open leadership positions and grow function to support new clinical trials • Implement a Relationship Management tool for Medical Affairs to provide measurement of activities and institutional knowledge of contacts and interactions • Evaluate needs in Drug Safety to meet increasing reporting responsibilities with EU launch and global COVID-19 vaccine trials • Provide oversight to Regulatory Affairs to ensure optimal regulatory strategies and on time filings.	Met all goals, and exceeded goals for the year, as follows: • Long-term growth of HEPLISAV-B substantially supported through efforts to facilitate and obtain ACIP universal recommendation for hepatitis B vaccines • Strengthened management and Medical Affairs teams by hiring a seasoned VP of Medical Affairs • Successfully implemented a new relationship management tool • Ensured Drug Safety team was able to successfully meet an increased workload	125%

After making these determinations regarding levels of corporate and individual performance achieved against the pre-established performance goals, the Compensation Committee (and the Board with respect to Mr. Spencer) reviewed and approved the annual cash incentive payouts noted below. As noted above, for the NEOs other than Messrs. Spencer and Novack, the cash incentive payouts were based 80% on achievement of corporate goals and 20% on individual performance.

	2021 Actual Annual Cash Incentive Paid						
	2021 Target Annual Cash Incentive		Achievement of Corporate Goals		Achievement of Individual Goals		
Name	% of Base Salary	$[1]	% of Target Annual Cash Incentive	$[1]	% of Target Annual Cash Incentive	$[1]	Total[1]
Ryan Spencer[2]	70%	$420,000	140%	588,000	NA	NA	$588,000
David F. Novack[2]	60%	$311,850	140%	436,590	NA	NA	$436,590
Kelly MacDonald [3]	50%	$156,250	140%	175,000	150%	$46,875	$221,875
Michael S. Ostrach[4]	50%	$239,165	NA	NA	NA	NA	NA
Robert Janssen, M.D.	50%	$240,469	140%	$269,325	125%	$60,177	$329,443

(1) Amounts are rounded to nearest dollar.

(2) Messrs. Spencer and Novack did not have separate individual goals, only corporate goals.

(3) Ms. MacDonald's bonus was prorated from her start date of March 1, 2022. The amounts in the table above for target annual incentive and actual annual incentive paid reflect pro-ration for the portion of the year in which Ms. MacDonald was employed with us.

(4) Due to his retirement in April 2021, Mr. Ostrach was not eligible for, and did not receive, an annual incentive award. Mr. Ostrach's retirement benefits are discussed further in the section entitled ''Involuntary Termination'' below.

Long-Term Equity Incentive Awards

In making annual long-term equity incentive awards to our NEOs in early 2021, the Compensation Committee considered each NEO's total equity outstanding as of December 31, 2020, performance during 2020 where applicable, the potential amount that could be realized at different hypothetical stock prices upon exercise of those awards and each NEO's percentage of ownership of the Company. The Compensation Committee also reviewed market and peer group data reference points with respect to an approximation of grant date fair value and shares as a percentage of total common shares outstanding. Additionally, the Compensation Committee considered the mix of stock options and RSUs granted in 2020. The Compensation Committee made final determinations based on its judgment in accordance with our pay-for-performance philosophy and the need to retain and motivate these highly experienced and essential members of our management team.

For 2021, the Compensation Committee (and the Board with respect to Mr. Spencer) determined to grant each NEO's annual long-term incentive compensation with a mix of stock options and RSUs. Specifically, in February 2021, the Compensation Committee approved annual equity grants for the NEOs in the form of time-based stock options and time-based and performance-based RSUs, with stock options representing 50% of the aggregate target award value, time-based RSUs representing 25% of the aggregate target award value and performance-based RSUs representing the remaining 25% of the aggregate target award value. This particular mix was chosen, and time-based RSUs were added to the mix in 2021, in order to provide appropriate retention incentives and the opportunity for our NEOs to realize value directly in line with our stock price, particularly in light of historic volatility in our stock price.

The time-based stock options granted in 2021 vest over three years, with one-third of the shares vesting on each anniversary of the grant date and the remainder vesting in equal monthly installments thereafter, subject to the NEO's continuous service with us through the vesting date. The time-based RSUs granted in 2021 vest over three years, with one-third of the shares vesting on each anniversary of the grant date.

The performance-based RSUs granted in 2021 would vest solely upon the Compensation Committee's certification that our:

- weighted average share price was in excess of $10.00 per share for a 90-day period prior to the end of 2023.

When this goal was initially formulated, our stock had traded substantially lower than $10.00 per share for the most of the trailing 18 months with significant volatility. The Compensation Committee determined that this goal was appropriately difficult to achieve in the prescribed performance period and required the NEOs to stretch well beyond the Company's natural trajectory to achieve them. Particularly, the goal represented (i) a 116%

increase in value of our stock relative to the closing price of $4.62 per share on the first trading day of 2021, (ii) a 95% increase in value of our stock relative to the closing price of $5.12 on January 20, 2021 when the goal was first proposed to the Committee, and (iii) a 58% increase in value of our stock relative to the closing price of $6.31 on January 29, 2021 when the goal was submitted to the Compensation Committee for final approval. Moreover, the Compensation Committee believed that the 90-day period to maintain the target price was significant in light of the historic performance and volatility in our stock price, would not reward anomalous or unsustained spikes in our share price and would only reward sustained value creation. No performance-based RSUs would vest if the performance goal was not achieved, and no more than 100% of performance-based RSUs would be eligible to vest, even upon achievement in excess of the performance goal. Our 2018 EIP provides that all grants are subject to twelve months minimum vesting, therefore even if the performance goal was achieved sooner, the grant could not vest for at least one year from grant.

The table below describes the stock options and RSUs granted to our NEOs in fiscal year 2021. Our Compensation Committee used its subjective judgement to determine the size of awards it believed were appropriate for each named executive officer, weighing the factors described above and in particular, the peer group data, each NEO's current equity holdings, including the significant amount of deeply underwater options held by our NEOs , and its desire to provide strong retentive value. Each of the 2021 equity awards listed below were granted in February 2021, except as otherwise noted.

Name	Time-Based Stock Option Awards (# of shares)	Time-Based RSU Awards (# of shares)	Performance-Based RSU Awards (# of shares)
Ryan Spencer	250,000	89,250	89,250
David F. Novack	150,000	52,500	52,500
Kelly MacDonald[(1)]	350,000	—	—
Michael S. Ostrach	85,000	30,000	30,000
Robert Janssen, M.D.	85,000	30,000	30,000

(1) Reflects Ms. MacDonald's new hire grant. The Compensation Committee determined the size and form of Ms. MacDonald's new hire grant as part of the negotiations pertaining to her commencement of employment and based on the amount and form the Compensation Committee felt was necessary and appropriate to serve as an initial inducement to recruit and retain Ms. MacDonald, after considering peer market data, internal equity among the executive team and her total compensation opportunity.

Other Executive Compensation Matters

Equity Compensation Policies

Our Compensation Committee approves equity awards for NEOs and authorizes the Chief Executive Officer to approve equity awards for all other employees based on approved pools for annual and new hire grants. Awards for senior vice president and above are approved either at a regularly-scheduled meeting of the Compensation Committee or by unanimous written consent. The effective date of the grant is generally the date of the meeting, or the date the last person executes the unanimous written consent.

The exercise price of stock options is not less than the closing price of our common stock on the Nasdaq Capital Market on the grant date of the stock option. We have no practice of timing grants of stock options or restricted stock awards to coordinate with the release of material non-public information, and we have not timed the release of material non-public information for purposes of affecting the value of the compensation awarded to our NEOs or any other employee.

We encourage our NEOs to hold a significant equity interest in our Company, but we have not set specific stock ownership guidelines.

Compensation Recovery Policy

Amounts paid and awards granted under our equity plans will be subject to recoupment in accordance with the Dodd-Frank Wall Street Reform and Consumer Protection Act and any applicable regulations under the Securities Act of 1933, as amended (the ''Securities Act''), any clawback policy the Company adopts or as is required by applicable law. In addition, as a public company subject to the provisions of Section 304 of the Sarbanes-Oxley Act of 2002, if we are required as a result of misconduct to restate our financial results due to our material noncompliance with any financial reporting requirements under the federal securities laws, our chief executive officer and chief financial officer may be legally required to reimburse us for any bonus or other

incentive-based or equity-based compensation they receive. In addition, we will comply with the requirements of the Dodd-Frank Wall Street Reform and Consumer Protection Act once the SEC final regulations on the subject become effective.

New Hire Compensation

In connection with Ms. MacDonald's commencement of employment with us in March 2021, pursuant to her offer letter with us, she received an initial base salary, target bonus and new hire stock option award, a $15,000 sign-on bonus and certain relocation benefits to assist her in moving from Boston to our Company headquarters in the San Francisco Bay Area, including a tax gross up of $865 to alleviate additional costs Ms. MacDonald incurred as a result of our requiring her relocation. The gross up on the relocation benefit was deemed appropriate in this instance because the benefit was modest and it made Ms. MacDonald whole for her out of pocket expenses associated with relocating cross-country. Both of Ms. MacDonald's sign-on bonus and relocation benefits are repayable to us if Ms. MacDonald voluntarily terminates her employment with us within 12 months of her start date. Ms. MacDonald also became eligible for potential severance benefits pursuant to a Management Agreement on the same terms as our NEOs other than Messrs. Spencer and Novack. The Compensation Committee determined the new hire compensation for Ms. MacDonald, in its discretion, as part of the negotiations pertaining to her recruitment and commencement of employment. The Compensation Committee felt the sign-on bonus and relocation benefits were necessary to recruit and retain Ms. MacDonald and reasonable in light of peer market data, internal equity among the executive team and her total compensation opportunity.

Severance Payouts to Departing NEOs

In September 2020, Mr. Ostrach informed the Company of his planned future retirement, and he and the Company entered into an amendment and restatement of his Management Continuity and Separation Agreement (the ''Restated Management Agreement''). The Restated Management Agreement provided certain benefits if Mr. Ostrach did not retire before March 31, 2021, because the Compensation Committee felt it was critical to retain Mr. Ostrach for an extended period to help identify his successor and assist with transition of his responsibilities. Effective April 1, 2021, Mr. Ostrach retired from Dynavax. Mr. Ostrach received the severance pay and benefits upon such retirement that he was entitled to pursuant to his Restated Management Agreement with the Company, as discussed further in the section entitled ''Involuntary Termination'' below. Following his retirement, Mr. Ostrach provided certain consulting services to us to further assist with the transition of his responsibilities, and to advise on intellectual property and other matters. His consulting agreement provides for an hourly rate of $500 per hour, and under the terms of the agreement he was expected to provide no more than 40 hours of service per month.

Tax and Accounting Implications

Accounting for Stock-Based Compensation

Under Financial Accounting Standard Board ASC Topic 718 (''ASC 718''), we are required to estimate and record an expense for each award of equity compensation over the vesting period of the award. We record share-based compensation expense on an ongoing basis according to ASC 718. The accounting impact of our compensation programs is one of many factors that the Compensation Committee considers in determining the structure and size of our executive compensation programs.

Deductibility of Executive Compensation

Under Section 162(m), compensation paid to each of the Company's ''covered employees'' that exceeds $1 million per taxable year is generally non-deductible unless the compensation qualifies for (i) certain grandfathered exceptions (including the ''performance-based compensation'' exception) for certain compensation paid pursuant to a written binding contract in effect on November 2, 2017 and not materially modified on or after such date or (ii) the reliance period exception for certain compensation paid by corporations that became publicly held on or before December 20, 2019.

Although the Compensation Committee will continue to consider tax implications as one factor in determining executive compensation, the Compensation Committee also looks at other factors in making its decisions and retains the flexibility to provide compensation for the Company's named executive officers in a manner consistent with the goals of the Company's executive compensation program and the best interests of the

Company and its stockholders, which may include providing for compensation that is not deductible by the Company due to the deduction limit under Section 162(m). The Compensation Committee also retains the flexibility to modify compensation that was initially intended to be exempt from the deduction limit under Section 162(m) if it determines that such modifications are consistent with the Company's business needs.

Compensation Risk Analysis

During fiscal 2021, our Compensation Committee reviewed our compensation policies as generally applicable to our employees in order to determine whether any such programs were likely to present a material risk to the Company. As part of its assessment, the Compensation Committee considered, among other things, the allocation of compensation among base salary and short- and long-term compensation, our approach to establishing Company-wide and individual financial, operational and other performance targets, and the nature of our key performance metrics. As a result of this review and analysis, the Compensation Committee determined that our policies and programs do not encourage excessive or inappropriate risk taking, and that the level of risk that they do encourage is not reasonably likely to have a material adverse effect on the Company.

Compensation Committee Report

In early 2022, the Compensation Committee discussed with management the Compensation Discussion and Analysis, contained in this proxy statement. Based on this review and discussion, the Compensation Committee has recommended to the Board that the Compensation Discussion and Analysis be included in this proxy statement and incorporated into our Annual Report on Form 10-K for the fiscal year ended December 31, 2021.

The material in this report is not ''soliciting material,'' is furnished to, but not deemed ''filed'' with, the SEC and is not deemed to be incorporated by reference in any filing of the Company under the Securities Act or the Exchange Act, other than the Company's Annual Report on Form 10-K, where it shall be deemed to be ''furnished,'' whether made before or after the date hereof and irrespective of any general incorporation language in any such filing.

Ms. Peggy V. Phillips, Chairperson
Mr. Natale Ricciardi
Dr. Daniel Kisner, M.D.

SUMMARY COMPENSATION TABLE

The following table sets forth all of the compensation awarded to, or earned by, our NEOs during the fiscal years ended December 31, 2021, 2020 and 2019.

Name and Principal Position	Year	Salary	Bonus	Stock Awards[1]	Option Awards[2]	Non-Equity Incentive Compensation[3]	All Other Compensation[4]	Total
Ryan Spencer Chief Executive Officer and Director	2021	$600,000	—	$1,605,608	$1,720,450	$588,000	$ 5,431[11]	$4,519,489
	2020	$515,000	—	$ 206,451	$ 455,338	$342,990	$ 2,000	$1,521,779
	2019	$391,212	—	$ 654,375	$1,957,520	$152,375	$ 2,000	$3,157,482
David F. Novack President and Chief Operating Officer	2021	$519,750	—	$ 935,025	$1,013,100	$436,590	$ 13,635[12]	$2,918,100
	2020	$495,000	—	$ 189,700	$ 523,742	$302,198	$ 2,000	$1,512,640
	2019	$465,886	—	$ 272,220	$1,701,362	$229,382	$ 2,000	$2,670,850
Kelly MacDonald[5] Senior Vice President and Chief Financial Officer	2021	$312,500	$15,000[9]	$ —	$2,250,920	$221,875	$ 4,042[10]	$2,804,337
Michael S. Ostrach[6] Former Senior Vice President, Chief Financial Officer and Chief Business Officer	2021	$ 77,626	—	$ 534,300	$ 731,762[8]	$ —	$650,711[7]	$1,994,399
	2020	$464,398	—	$ 135,500	$ 381,896	$254,955	$ 2,000	$1,238,749
	2019	$450,872	—	$ 230,340	$ 611,433	$209,665	$ 2,000	$1,504,310
Robert Janssen, M.D. Senior Vice President and Chief Medical Officer	2021	$480,938	—	$ 534,300	$ 574,090	$329,443	$ 6,793[13]	$1,925,564
	2020	$466,930	—	$ 135,500	$ 381,896	$256,345	$ 2,000	$1,242,671
	2019	$453,330	—	$ 272,220	$ 722,602	$210,798	$ 2,000	$1,660,950

(1) Represents the aggregate grant date fair value of RSUs granted in the fiscal year in accordance with ASC 718. See note 15 of our ''Notes to Consolidated Financial Statements'' in our Annual Report on Form 10-K filed with the SEC on February 28, 2022 for a discussion of assumptions we made in determining the compensation costs included in this column. With regard to awards with performance-based vesting, the grant date fair value assumes the highest level of achievement had been met. For further discussion of these performance-based RSUs, see the section entitled ''Compensation Discussion and Analysis – 2021 Executive Compensation Decisions – Long-Term Equity Incentive Awards.''

(2) Represents the aggregate grant date fair value of option awards granted in the fiscal year in accordance with ASC 718. See note 15 of our ''Notes to Consolidated Financial Statements'' in our Annual Report on Form 10-K filed with the SEC on February 28, 2022 for a discussion of assumptions we made in determining the compensation costs included in this column.

(3) Represents the annual cash incentive bonuses earned pursuant to our annual cash incentive bonus plan for services rendered in the fiscal year. For further discussion see the section entitled ''Compensation Discussion and Analysis – 2021 Executive Compensation Decisions – 2021 Annual Incentive Program – Structure, Goals and Payout Decision.''

(4) Unless otherwise stated, represents $2,000 401(k) matching contribution for each NEO made by the Company in the fiscal year.

(5) Ms. MacDonald was appointed as our Senior Vice President and Chief Financial Officer on January 19, 2021, effective upon her start date of March 1, 2021.

(6) Mr. Ostrach retired as our Senior Vice President, Chief Financial Officer and Chief Business Officer, effective April 1, 2021. Following his retirement, he has continued to provide certain services as a strategic adviser/independent consultant.

(7) Represents (i) payments under the Restated Management Agreement of $478,330 in accrued severance payments, representing 12 months of base salary and $72,501 of COBRA premiums, (ii) $2,000 in 401(k) matching contribution made by the Company in the fiscal year (iii) $96,631 in consulting fees paid for services as a strategic adviser/independent consultant following Mr. Ostrach's retirement and (iv) $1,248 of premiums for supplemental long-term disability insurance that is provided to certain members of our management.

(8) Includes $157,672 of incremental fair value, computed in accordance with ASC 718, in connection with the modification of equity awards granted to Mr. Ostrach which provided for an additional six months of vesting on all time-based stock options outstanding at the time of Mr. Ostrach's retirement; and an extension of exercise period for stock options upon the earlier of (i) the date on which the original term of such stock options would otherwise expire and (ii) 12 months following the date of Mr. Ostrach's retirement

(9) Represents a sign-on bonus paid in connection with Ms. MacDonald's recruitment.

(10) Includes $1,929 of relocation reimbursement and $865 of relocation tax gross-up impact, as well as, $1,248 of premiums for supplemental long-term disability insurance that is provided to certain members of our management.

(11) Includes (i) $2,000 in 401(k) matching contribution made by the Company in the fiscal year and (ii) $11,635 of premiums for supplemental long-term disability insurance that is provided to certain members of our management.

(12) Includes (i) $2,000 in 401(k) matching contribution made by the Company in the fiscal year and (ii) $3,431 of premiums for supplemental long-term disability insurance that is provided to certain members of our management.

(13) Includes (i) $2,000 in 401(k) matching contribution made by the Company in the fiscal year and (ii) $4,793 of premiums for supplemental long-term disability insurance that is provided to certain members of our management.

GRANTS OF PLAN BASED AWARDS

The following table shows certain information regarding grants of plan-based awards to our NEOs during the fiscal year ended December 31, 2021.

Name	Grant Date	Date of Board or Compensation Committee Action to Grant Award	Estimated Future Payouts Under Non-Equity Incentive Plan Awards Target[1] ($)	Estimated Future Payouts Under Non-Equity Incentive Plan Awards Max ($)	Estimated Future Payouts Under Equity Incentive Plan Awards Target[2] (#)	All Other Stock Awards: Number of Shares of Stock or Units (#)	All Other Option Awards: Number of Securities Underlying Options (#)	Exercise or Base Price of Option Awards ($/Share)	Grant Date Fair Value of RSU and Option Awards[3] ($)
Ryan Spencer	—	—	$420,000	$735,000	—	—	—	—	—
	2/4/2021	2/4/2021	—	—	—	—	250,000	$ 9.59	$1,720,450
	2/4/2021	2/4/2021	—	—	89,250	—	—	—	$ 749,700
	2/4/2021	2/4/2021	—	—	—	89,250	—	—	$ 855,908
David F. Novack	—	—	$311,850	$545,738	—	—	—	—	—
	2/3/2021	2/3/2021	—	—	—	—	150,000	$ 9.41	$1,013,100
	2/3/2021	2/3/2021	—	—	52,500	—	—	—	$ 441,000
	2/3/2021	2/3/2021	—	—	—	52,500	—	—	$ 494,025
Kelly MacDonald	—	—	$156,250	$273,438	—	—	—	—	—
	3/1/2021	3/1/2021	—	—	—	—	350,000	$ 8.90	$2,250,920
Michael S. Ostrach	—	—	$239,165	$418,539	—	—	—	—	—
	2/3/2021	2/3/2021	—	—	—	—	85,000	$ 9.41	$ 574,090
	2/3/2021	2/3/2021	—	—	30,000	—	—	—	$ 252,000
	2/3/2021	2/3/2021	—	—	—	30,000	—	—	$ 282,300
	4/1/2021[5]	4/1/2021[5]	—	—	—	—	14,666	$10.47	$ 98,101[4]
	4/1/2021[6]	4/1/2021[6]	—	—	—	—	17,500	$ 5.42	$ 59,571[4]
Robert Janssen, M.D.	—	—	$240,469	$420,821	—	—	—	—	—
	2/3/2021	2/3/2021	—	—	—	—	85,000	$ 9.41	$ 574,090
	2/3/2021	2/3/2021	—	—	30,000	—	—	—	$ 252,000
	2/3/2021	2/3/2021	—	—	—	30,000	—	—	$ 282,300

(1) Represents the target and maximum level of cash incentive award in fiscal year 2021 as further described under ''Compensation Discussion and Analysis – Elements of Executive Compensation''; our annual cash incentive program does not specify a minimum level..

(2) Represents the number of PSUs granted in the fiscal year that are subject to performance-based vesting, as described in the ''Compensation Discussion and Analysis.''

(3) Represents the aggregate grant date fair value of awards granted in fiscal year 2021 in accordance with ASC 718. See Note 15 of our ''Notes to Consolidated Financial Statements'' in our Annual Report on Form 10-K filed with the SEC on February 28, 2022 for a discussion of the assumptions we made in determining the compensation costs included in this column. With regard to awards with performance-based vesting, the grant date fair value assumes the highest level of achievement had been met, as reported in the ''Summary Compensation Table.'' For further discussion of these performance-based RSUs, see the section entitled ''Compensation Discussion and Analysis – 2021 Executive Compensation Decisions – Long-Term Equity Incentive Awards.''

(4) Represents incremental fair value, computed in accordance with ASC 718, in connection with the modification of equity awards granted to Mr. Ostrach which provided for an additional six months of vesting on all time-based stock options outstanding at the time of Mr. Ostrach's retirement; and an extension of exercise period for stock options upon the earlier of (i) the date on which the original term of such stock options would otherwise expire and (ii) 12 months following the date of Mr. Ostrach's retirement.

(5) Represents the modification date of option awards previously granted on February 22, 2019.

(6) Represents the modification date of option awards previously granted on February 12, 2020.

NARRATIVE DISCLOSURE TO SUMMARY COMPENSATION TABLE AND GRANTS OF PLAN BASED AWARDS TABLE

The material terms of NEO annual compensation and the explanations of the amounts of base salary, annual cash-based incentives, and equity-based awards in proportion to total compensation are described under ''Compensation Discussion and Analysis'' in this proxy statement. Our severance and change in control benefits are described under ''Summary of Change in Control and Involuntary Termination Arrangements'' in this proxy statement.

As discussed in the ''Compensation Discussion and Analysis,'' the fiscal year 2021 cash incentive amounts were paid pursuant to the annual cash incentive compensation program, based on the achievement of certain

corporate and individual goals. Equity-based awards represent a mix of time-based options and time-based and performance-based RSUs, as described in the ‘‘Compensation Discussion and Analysis’’ and were granted in 2021 under our 2018 Plan, and in the case of Ms. MacDonald, the 2021 Inducement Plan. The terms of awards granted under the 2021 Inducement Plan are substantially similar to those of the 2018 Plan, including the treatment of awards upon termination of service and upon a change in control transaction.

OUTSTANDING EQUITY AWARDS AT FISCAL YEAR END

The following table shows certain information regarding outstanding equity awards for NEOs as of December 31, 2021.

	Option Awards						Stock Awards			
Name	Number of Securities Underlying Unexercised Options (#) Exercisable	Number of Securities Underlying Unexercised Options (#) Unexercisable	Equity Incentive Plan Awards: Number of Securities Underlying Unexercised Unearned Options (#)	Option Exercise Price ($)	Vesting Commencement Date	Option Expiration Date	Number of Shares or Units that Have Not Vested (#)	Market Value of Stock that Have Not Vested ($)[1]	Equity Incentive Plan Awards: Number of Unearned Shares or Other Rights that Have Not Vested (#)	Equity Incentive Plan Awards: Market or Payout Value of Unearned Shares or Other Rights that Have Not Vested ($)
Ryan Spencer	4,500	—	—	$36.80	2/1/2012	1/31/2022	—	—	—	—
	2,000	—	—	$42.60	10/22/2012	10/21/2022	—	—	—	—
	5,250	—	—	$30.60	2/6/2013	2/5/2023	—	—	—	—
	3,500	—	—	$16.70	2/6/2014	2/5/2024	—	—	—	—
	9,500	—	—	$16.00	2/9/2015	2/8/2025	—	—	—	—
	2,000	—	—	$30.49	9/10/2015	9/9/2025	—	—	—	—
	56,000	—	—	$16.45	2/1/2018	1/31/2025	—	—	—	—
[2]	41,666	8,334	—	$ 3.81	6/14/2019	6/13/2026	—	—	—	—
[2]	266,666	133,334	—	$ 6.80	12/16/2019	12/15/2026	—	—	—	—
[5]	—	—	—	—	—	—	20,833	$ 293,120	—	—
[2]	79,444	50,556	—	$ 5.22	2/13/2020	2/12/2027	—	—	—	—
[6]	—	—	—	—	—	—	—	—	39,550	$ 556,469
[2]	—	250,000	—	$ 9.59	2/4/2021	2/3/2028	—	—	—	—
[7]	—	—	—	—	—	—	89,250	$1,255,748	—	—
[8]	—	—	—	—	—	—	—	—	89,250	$1,255,748
David F. Novack	30,000	—	—	$21.40	3/25/2013	3/24/2023	—	—	—	—
	22,000	—	—	$17.10	2/4/2014	2/3/2024	—	—	—	—
	75,000	—	—	$16.00	2/9/2015	2/8/2025	—	—	—	—
	64,000	—	—	$21.99	2/4/2016	2/3/2023	—	—	—	—
	80,000	—	—	$16.45	2/1/2018	1/31/2025	—	—	—	—
	18,000	—	—	$16.45	2/1/2018	1/31/2025	—	—	—	—
[2]	98,222	5,778	—	$10.47	2/22/2019	2/21/2026	—	—	—	—
[2]	20,833	4,167	—	$ 3.81	6/14/2019	6/13/2026	—	—	—	—
[2]	133,333	66,667	—	$ 6.80	12/16/2019	12/15/2026	—	—	—	—
[2]	88,000	56,000	—	$ 5.42	2/12/2020	2/11/2027	—	—	—	—
[4]	—	—	—	—	—	—	—	—	35,000	$ 492,450
[2]	—	150,000	—	$ 9.41	2/3/2021	2/2/2028	—	—	—	—
[9]	—	—	—	—	—	—	52,500	$ 738,675	—	—
[10]	—	—	—	—	—	—	—	—	52,500	$ 738,675
Kelly MacDonald [2]	—	350,000	—	$ 8.90	3/1/2021	2/29/2028	—	—	—	—
Michael S.Ostrach	18,000	—	—	$34.80	1/31/2012	1/30/2022	—	—	—	—
	20,000	—	—	$30.80	2/5/2013	4/1/2022[3]	—	—	—	—
	27,000	—	—	$17.10	2/4/2014	4/1/2022[3]	—	—	—	—
	67,000	—	—	$16.00	2/9/2015	4/1/2022[3]	—	—	—	—
	29,000	—	—	$28.45	8/27/2015	4/1/2022[3]	—	—	—	—
	84,000	—	—	$21.99	2/4/2016	4/1/2022[3]	—	—	—	—
	80,000	—	—	$16.45	2/1/2018	4/1/2022[3]	—	—	—	—
	18,000	—	—	$16.45	2/1/2018	4/1/2022[3]	—	—	—	—
	150,000	—	—	$18.40	3/21/2018	4/1/2022[3]	—	—	—	—
	75,777	—	—	$10.47	2/22/2019	4/1/2022[3]	—	—	—	—
	55,416	—	—	$ 5.42	2/12/2020	4/1/2022[3]	—	—	—	—

Name	Option Awards						Stock Awards			
	Number of Securities Underlying Unexercised Options (#) Exercisable	Number of Securities Underlying Unexercised Options (#) Unexercisable	Equity Incentive Plan Awards: Number of Securities Underlying Unexercised Unearned Options (#)	Option Exercise Price ($)	Vesting Commencement Date	Option Expiration Date	Number of Shares or Units that Have Not Vested (#)	Market Value of Stock that Have Not Vested ($)[1]	Equity Incentive Plan Awards: Number of Unearned Shares or Other Rights that Have Not Vested (#)	Equity Incentive Plan Awards: Market or Payout Value of Unearned Shares or Other Rights that Have Not Vested ($)
Robert Janssen, M.D.	2,500	—	—	$36.80	2/1/2012	1/31/2022	—	—	—	—
	15,000	—	—	$41.40	10/31/2012	10/30/2022	—	—	—	—
	18,000	—	—	$17.10	2/4/2014	2/3/2024	—	—	—	—
	56,000	—	—	$16.00	2/9/2015	2/8/2025	—	—	—	—
	80,000	—	—	$21.99	2/4/2016	2/3/2023	—	—	—	—
	80,000	—	—	$16.45	2/1/2018	1/31/2025	—	—	—	—
	18,000	—	—	$16.45	2/1/2018	1/31/2025	—	—	—	—
[2]	98,222	5,778	—	$10.47	2/22/2019	2/21/2026	—	—	—	—
[2]	64,166	40,834	—	$ 5.42	2/12/2020	2/11/2027	—	—	—	—
[4]	—	—	—	—	—	—	—	—	25,000	$351,750
[2]	—	85,000	—	$ 9.41	2/3/2021	2/2/2028	—	—	—	—
[9]	—	—	—	—	—	—	30,000	$422,100	—	—
[10]	—	—	—	—	—	—	—	—	30,000	$422,100

(1) Represents the aggregate fair value of RSUs based on the last closing price per share as of December 31, 2021, of $14.07.

(2) Options vest at the rate of 1/3rd of the shares on the first anniversary of the vesting commencement date, with 1/36th of the total number of shares vesting each month thereafter.

(3) Mr. Ostrach's option expiration dates have been adjusted as a result of his retirement on April 1, 2021.

(4) This RSU was granted on February 12, 2020, and are subject to performance-based vesting.

(5) This RSU was granted on February 22, 2019, prior to Mr. Spencer becoming an NEO. The RSU vests over three years with one-third vesting on each annual anniversary date.

(6) This RSU was granted on February 13, 2020, and are subject to performance-based vesting.

(7) This RSU was granted on February 4, 2021 and vests over three years with one-third vesting on each annual anniversary date.

(8) This PSU was granted on February 4, 2021. These PSUs vest when the Company's weighted average share price is above $10 for a 90 calendar-day period before the end of 2023. Furthermore, because these PSUs require a 12-month vesting minimum, if the goal is achieved in less than 12 months from the grant date, the PSUs will vest on the first anniversary of the grant date.

(9) This RSU was granted on February 3, 2021 and vests over three years with one-third vesting on each annual anniversary date.

(10) This PSU was granted on February 3, 2021. These PSUs vest if the Company's weighted average share price is above $10 for a 90 calendar-day period before the end of 2023. Furthermore, because these PSUs require a 12-month vesting minimum, if the goal is achieved in less than 12 months from the grant date, the PSUs will vest on the first anniversary of the grant date.

OPTION EXERCISES AND STOCK VESTED

The following table provides information on stock awards that vested, including the number of shares acquired upon vesting and the value realized, determined as described below, for the named executive officers in the fiscal year ended December 31, 2021.

Name	Option Awards		Stock Awards	
	Number of Shares Acquired on Exercise (#)	Value Realized on Exercise ($)[1]	Number of Shares Acquired on Vesting (#)	Value Realized on Vesting ($)[2]
Ryan Spencer	—	—	20,833	$199,997
David F. Novack	—	—	—	—
Kelly MacDonald	—	—	—	—
Michael S. Ostrach	9,325	$ 72,642	—	—
Robert Janssen, M.D.	142,805	$947,327	—	—

(1) The value realized on exercise is determined by multiplying the number of shares of stock acquired upon the exercise by the difference between the exercise price and the market value of the underlying shares as reported by the Nasdaq Capital Market on the exercise date.

(2) The value realized on vesting is determined by multiplying the number of shares of stock by the market value of the underlying shares as reported by the Nasdaq Capital Market on the vesting date.

PENSION BENEFITS

None of the NEOs participates in or has an account balance under any pension or qualified or non-qualified defined benefit retirement plan sponsored by the Company.

NON -QUALIFIED DEFERRED COMPENSATION

None of the NEOs participates in or has an account balance under any non-qualified defined contribution plan or other non-qualified deferred compensation plan maintained by the Company.

POTENTIAL PAYMENTS UPON CHANGE IN CONTROL OR INVOLUNTARY TERMINATION

Summary of Change in Control and Involuntary Termination Arrangements.

To promote retention of certain key executives, our Board has authorized the Company to enter into Management Continuity and Separation Agreements with each NEO. We refer to such agreements in effect as of December 31, 2021 as the ''Management Agreements.'' In order to be eligible to receive benefits under the Management Agreements, our NEOs and other officers must execute a general waiver and release of claims, and such release must become effective in accordance with its terms.

Change in Control.

NEOs do not receive an equity acceleration benefit in the event of a change in control (unless there is termination of employment without cause or for good reason) of the Company, as described below.

Qualifying Termination in Connection with a Change in Control.

Under the Management Agreements, if, on or during the two-year period following a change in control (as described below), the NEO's employment is involuntarily terminated, the NEO will, subject to the execution of a release of claims, be entitled to receive:

- a lump-sum cash payment equal to a specified number of months (21 months for Mr. Spencer, 18 months for Mr. Novack and 15 months for our other NEOs) of the executive's then-effective annual base salary;
- a lump-sum cash payment equal to a specified percentage of the NEO's target annual variable cash compensation (175% of such target for Mr. Spencer, 150% for Mr. Novack, and 125% of such target for our other NEOs) for the year of termination;
- cash payments equal to the value of the applicable COBRA premiums for up to the same number of months as the NEO receives in base salary, payable in a single lump sum, as set forth in the first bullet (the ''COBRA Payment'');
- acceleration of vesting of all outstanding equity awards at the time of such termination; and
- the extension of exercisability of all stock options to purchase the Company's common stock for a period of 3 years following termination of employment (but in any event not beyond each option's expiration date).

In addition, if any payments or benefits would constitute a ''parachute payment'' within the meaning of Section 280G of the Code and such payments would be subject to the excise tax imposed by Section 4999 of the Code, then such payments will either be (1) provided to the NEO in full or (2) reduced to such lesser amount that would result in no portion of such payments being subject to the excise tax, whichever amount after taking into account all applicable taxes, including the excise tax, would result in the NEO's receipt, on an after-tax basis, of the greatest amount of such payments.

The Management Agreements generally define a change in control to mean the occurrence of a change in the majority ownership of the voting securities of the Company; a merger that results in change in the majority ownership of the voting securities of the Company; the sale of all or substantially all of the assets; or over a period of 12 months or less, when a majority of our Board becomes comprised of individuals who were not serving on our Board as of a specified date, or whose nomination, appointment, or election was not approved by a majority of the directors who were serving on our Board as of such specified date.

The table below outlines the potential payments and benefits payable to each NEO in the event such executive's termination in connection with a Change in Control of the Company, assuming such event had occurred on December 31, 2021.

Name[1]	Severance Payment	Continuation of Benefits	Value of Accelerated Stock Awards[2]	Total
Ryan Spencer	$1,785,000	$38,166	$5,982,683	$7,805,849
David F. Novack	$1,247,400	$48,366	$3,701,090	$4,996,856
Kelly MacDonald	$ 703,125	$14,807	$1,809,500	$2,527,432
Robert Janssen, M.D.	$ 901,759	$29,677	$1,966,065	$2,897,501

(1) Mr. Ostrach retired from the Company, effective April 1, 2021.See the section entitled ''Involuntary Termination'' below for the actual retirement benefits paid to Mr. Ostrach in connection with such retirement; Mr. Ostrach is not entitled to any additional benefits in connection with a Change in Control.

(2) Represents the value of accelerated vesting of equity awards if the event took place on December 31, 2021. The value for RSUs is calculated based on the closing price per share on December 31, 2021. The value for stock option awards is calculated based on the ''spread'' between the closing price per share on December 31, 2021 of $14.07 and the exercise price of the vested awards, to the extent such vested awards were ''in the money.''

Involuntary Termination.

Under the terms of the Management Agreements, upon an ''involuntary'' termination without ''cause'' or, if applicable, upon a resignation for ''good reason'' (as defined below), the NEO will, subject to the execution of a release of claims, be entitled to receive:

- a lump-sum cash payment equal to the specified number of months (ranging from 12 to 21) of the executive's then-effective annual base salary;
- the COBRA Payment; and
- for Messrs. Spencer and Novack, the extension of exercisability of all vested stock options to purchase the Company's common stock for a period of 18 months, and 15 months, respectively (and 12 months for all other NEOs) following termination of employment (but in any event not beyond each option's expiration date).

For purposes of the Management Agreements, ''cause'' generally means (1) gross negligence or willful misconduct in the performance of duties to the Company, where such gross negligence or willful misconduct has resulted or is likely to result in substantial and material damage to the Company or its subsidiaries; (2) repeated unexplained or unjustified absence from the Company; (3) a material and willful violation of any federal or state law; (4) commission of any act of fraud with respect to the Company; or (5) conviction of a felony or a crime involving moral turpitude causing material harm to the standing and reputation of the Company, in each case as determined in good faith by the Board.

For purposes of the Management Agreements, ''good reason'' generally means the NEO's voluntary termination following (1) a material reduction or change in job duties, responsibilities, and requirements inconsistent with the NEO's position with the Company and his or her prior duties, responsibilities, and requirements, or a material change in the level of management to which the NEO reports; (2) any material reduction of base compensation (other than in connection with a general decrease in base salaries for most officers of the successor corporation); or (3) the refusal to relocate to a facility or location more than 35 miles from the Company's current location. The NEO must provide 90 days' notice of the event giving rise to good reason, give the Company 30 days' to cure (if curable), and any resignation for good reason must occur within 180 days after the occurrence of the event giving rise to such resignation right.

In addition, in September 2020, the Company and Mr. Ostrach entered into an amended and restated management continuity and separation agreement (the ''Restated Management Agreement''), which in addition to the above benefits, also provides that in the event of an involuntary termination (which includes retirement) prior to March 31, 2021 that does not occur in connection with a change in control, Mr. Ostrach will receive, in addition to a cash severance benefit equal to twelve 12 months of his annual base salary, (x) 100% of his bonus for 2020 (the ''Actual Bonus'') if such involuntary termination occurs prior to the date that the actual bonus for such year is determined by the Company or (y) the greater of his 2020 target bonus or the Actual Bonus if such

involuntary termination occurs on or after the date that the Actual Bonus is determined by the Company. Mr. Ostrach's entitlement to COBRA Payment will increase from 12 to 18 months; and he will be eligible for an additional six months of vesting on all time-based stock options outstanding at the time of his Retirement. In the event of Mr. Ostrach's retirement on or after March 31, 2021 but no later than December 31, 2021 ("Retirement"): Mr. Ostrach will receive (i) 12 months of his annual base salary and (ii) the Actual Bonus. Mr. Ostrach will be entitled to 18 months of COBRA Payment. Mr. Ostrach will receive an additional six months of vesting on all time-based stock options outstanding at the time of his Retirement; and the exercise period for stock options held by Mr. Ostrach and that are outstanding and vested as of the date of Retirement will end upon the earlier of (i) the date on which the original term of such stock options would otherwise expire and (ii) 12 months following the date of his Retirement, unless the terms of the option agreement provide for a longer period. Mr. Ostrach retired effective April 1, 2021. Accordingly, he became entitled to the benefits under the terms of his Restated Management Agreement described above for a retirement on or after March 31, 2021 but not later than December 31, 2021.

The table below outlines the potential payments and benefits payable to each NEO other than Mr. Ostrach, in the event of such NEO's involuntary termination not in connection with a change in control had occurred on December 31, 2021. Because Mr. Ostrach retired, effective April 1, 2021, the table below outlines the payments and benefits he became entitled to as a result of his retirement.

Name	Severance Payment	Continuation of Benefits	Value of Accelerated Stock Awards	Total
Ryan Spencer	$900,000	$32,714	$ —	$932,714
David F. Novack	$649,688	$40,305	$ —	$689,993
Kelly MacDonald	$375,000	$11,846	$ —	$386,846
Michael Ostrach[(1)]	$478,330	$72,501	$81,379	$632,210
Robert Janssen, M.D.	$480,938	$23,742	$ —	$504,680

(1) Represents the payments and benefits Mr.Ostrach became entitled to as a result of his retirement on April 1, 2021 pursuant to his Restated Management Agreement. This represents: (i) a cash payment equal to 12 months of his annual base salary, (ii) 18 months of COBRA Payment, (iii) an additional six months of vesting on all time-based stock options outstanding at the time of his retirement, and (iv) the exercise period for stock options held by Mr. Ostrach and that were outstanding and vested as of the date of his retirement will end upon the earlier of (a) the date on which the original term of such stock options would otherwise expire and (b) 12 months following the date of his retirement, unless the terms of the option agreement provide for a longer period.

PAY RATIO DISCLOSURE

Under SEC rules, we are required periodically to calculate and disclose the annual total compensation of our median employee, as well as the ratio of the annual total compensation of our median employee as compared to the annual total compensation of our Chief Executive Officer (''CEO Pay Ratio''). To identify our median employee, we used the following methodology:

- To determine our total population of employees, we included all full-time, part-time, and temporary employees as of December 31, 2021.
- To identify our median employee from our employee population, we calculated the aggregate amount of each employee's 2021 base salary (using amounts actually paid for hours worked, including overtime, during 2021 for hourly employees and actual salary paid for our remaining employees), the actual value of annual cash incentive awards earned in 2021, and the value of equity awards granted in 2021 using the same methodology we use for estimating the value of the equity awards granted to our named executive officers and reported in our Summary Compensation Table.
- In making this determination, we annualized the compensation elements listed above of employees who were employed by us for less than the entire calendar year.
- Compensation paid in foreign currencies was converted to U.S. dollars based on exchange rates in effect on December 31, 2021.

Because we had an even number of employees as of December 31, 2021, we determined two employees at the median using the approach described above. Both of these employees were hired in 2021, so we substituted another employee with substantially similar compensation as our median employee. Once the median employee was identified, we then calculated the annual total compensation of this employee for 2021 in accordance with the requirements of the Summary Compensation Table.

For 2021, the median of the annual total compensation of our employees (other than our Chief Executive Officer) was $188,019 and the annual total compensation of our Chief Executive Officer, as reported in the Summary Compensation Table included in this proxy statement, was $4,519,489. Based on this information, the ratio of the annual total compensation of our Chief Executive Officer to the median of the annual total compensation of all employees was approximately 24-to-1.

The CEO Pay Ratio above represents our reasonable estimate calculated in a manner consistent with SEC rules and applicable guidance. SEC rules and guidance provide significant flexibility in how companies identify the median employee, and each company may use a different methodology and make different assumptions particular to that company. As a result, and as explained by the SEC when it adopted these rules, in considering the pay ratio disclosure, stockholders should keep in mind that the rule was not designed to facilitate comparisons of pay ratios among different companies, even companies within the same industry, but rather to allow stockholders to better understand and assess each particular company's compensation practices and pay ratio disclosures.

Neither the Compensation Committee nor our management used our CEO Pay Ratio measure in making compensation decisions.

DIRECTOR COMPENSATION

NON-EMPLOYEE DIRECTOR COMPENSATION PHILOSOPHY

Our non-employee director compensation philosophy is based on the following guiding principles:

- Aligning the long-term interests of stockholders and directors; and
- Compensating directors appropriately and adequately for their time, effort and experience

The elements of director compensation consist of annual cash retainers and equity awards, as well as customary and usual expense reimbursement in attending Board and committee meetings. In an effort to align the long-term interests of our stockholders and non-employee directors, the mix of cash and equity compensation has historically been, and is currently, weighted more heavily to equity.

The Board approves changes to non-employee director compensation after considering recommendations of the Compensation Committee. When considering non-employee director compensation decisions, the Compensation Committee believes it is important to be informed as to current compensation practices of comparable publicly-held companies in the life sciences industry, especially to understand the demand and competitiveness for attracting and retaining the expertise of highly qualified individuals. Thus, the Compensation Committee considers recommendations from Arnosti based on an analysis of director compensation at our peer companies. Our compensation arrangements for our non-employee directors are set forth in our Non-Employee Director Compensation Policy (the ''Director Compensation Policy'') and our Board may approve additional cash and equity awards for our non-employee directors in its discretion. The Director Compensation Policy outlines cash and equity compensation automatically payable to non-employee members of the Board, unless such non-employee director declines receipt of such cash or equity compensation by written notice to us. The Compensation Committee reviews our non-employee director compensation relative to industry practices every year, and last amended it in October 2021 (the ''Amended Director Compensation Policy'').

Previously, our stockholders approved a limit in our 2018 Equity Incentive Plan on the amount of compensation that our non-employee directors may receive for service during any fiscal year. The 2018 EIP provides that the aggregate value of all cash and equity-based compensation granted or paid by us to any individual for service as a non-employee director of the Board with respect to any fiscal year of the Company may not exceed (i) a total of $200,000 with respect to any such cash compensation and (ii) $800,000 in total value with respect to any such equity-based compensation (including awards granted under our 2018 Equity Incentive Plan and any other equity-based awards), calculating the value of any such awards based on the grant date fair value of such awards for financial reporting purposes. If our stockholders approve Proposal 2 at the Annual Meeting, the Amended 2018 EIP will provide that for any individual who is first appointed or elected to the Board during any fiscal year of the Company, the limit for such individual's equity-based compensation will be $1,200,000 with respect to such fiscal year. Neither the limit on non-employee director compensation nor the increase to such limit is intended to serve as an increase in the annual amount of non-employee director compensation; rather, the limit and the increase to such limit were approved for the purpose of limiting the amount of compensation the Board can approve for non-employee directors each year.

CASH COMPENSATION ARRANGEMENTS

During 2021, under our Director Compensation Policy, each member of our Board who was not an employee or officer of the Company received the following cash compensation for Board services:

- A $65,000 annual retainer for service as Chair of the Board or, alternatively, a $40,000 annual retainer for service as a member of the Board (increased to a $100,000 annual retainer for service as Chair of the Board, or, alternatively, a $50,000 annual retainer for service as a member of the Board under the Amended Director Compensation Policy).
- A $20,000 annual retainer for the Chair of the Audit Committee and a $10,000 annual retainer for each additional member of the Audit Committee.
- A $15,000 annual retainer for the Chair of the Compensation Committee and a $7,000 annual retainer for each additional member of the Compensation Committee.

- A $10,000 annual retainer for the Chair of the Nominating and Corporate Governance Committee and $5,000 annual retainer for each additional member of the Nominating and Corporate Governance Committee.

We amended the cash portion of our Director Compensation Policy on the advice of Arnosti, our compensation consultant, effective as of October 1, 2021, to increase the annual retainer for service as Chair of the Board from $65,000 to $100,000 and the annual retainer for service as a member of the Board from $40,000 to $50,000.

Cash compensation is paid on a quarterly basis, in advance, except that for new appointments (whether to the Board or to a committee seat not previously held) the fees for that quarter are pro-rated based on the actual number of days served during such quarter. We also reimburse our non-employee directors for their reasonable expenses incurred in attending meetings of our Board and committees of our Board.

EQUITY COMPENSATION

The table below summarizes our equity compensation program for non-employee directors under the Director Compensation Policy and the Amended Director Compensation Policy:

	Director Compensation Policy	Amended Director Compensation Policy
Each new director automatically receives an initial equity award (''Initial Grant'') upon the date each such person is elected or appointed to the Board that vests in equal annual installments over three years, provided the director continues to provide services to us through each vesting date	Initial Grant consisting of a non-qualified stock option to purchase 50,000 shares of our common stock	Initial Grant consisting of a non-qualified stock option and an RSU, together equal to the stock option equivalent[(1)] of 60,000 shares of our common stock
On the date of each annual meeting of our stockholders, each non-employee director automatically receives a subsequent equity award (''Subsequent Grant'')(2) that vests in full on the one-year anniversary of the grant date, provided the director continues to provide services to us through each vesting date.	Subsequent Grant consisting of a non-qualified stock option to purchase 25,000 shares of our common stock	Subsequent Grant consisting of a non-qualified stock option and an RSU, together equal to the stock option equivalent[(1)] of 30,000 shares of our common stock

(1) Each Initial Grant and each Subsequent Grant under the Amended Director Compensation Policy will be delivered such that approximately 75% of the value is delivered as a non-qualified stock option and approximately 25% of the value is delivered as an RSU, using the methodology for determining actual share amounts and the stock option to restricted stock unit award ratio most recently approved by the Board or the Compensation Committee

(2) Under the Director Compensation Policy and the Amended Director Compensation Policy, a non-employee director's first Subsequent Grant is reduced to the following:

a. 75% of the Subsequent Grant if the service period from the non-employee director's initial election or appointment date to the annual meeting was between 7 and 10 months;

b. 50% of the Subsequent Grant if the service period from the non-employee director's initial election or appointment date to the annual meeting was between 4 and 7 months; and

c. 25% of the Subsequent Grant if the service period from the non-employee director's initial election or appointment date to the annual meeting was between 1 and 4 months.

DIRECTOR COMPENSATION TABLE

The following table shows for the fiscal year ended December 31, 2021, certain information with respect to the cash and equity compensation of all non-employee directors of the Company:

Name	Fees Earned or Paid in Cash[1]	Stock Awards[2][3]	Option Awards[2][3]	Total
Scott Myers	$25,000	$188,031	$509,747	$722,778
Francis R. Cano, Ph.D.	$45,000	—	$132,658	$177,658
Julia M. Eastland	$58,361	—	$132,658	$191,019
Andrew A. F. Hack, M.D., Ph.D.	$76,639	—	$132,658	$209,297
Daniel L. Kisner, M.D.	$57,000	—	$132,658	$189,658
Brent MacGregor	$45,000	—	$132,658	$177,658
Peter R. Paradiso	$40,000	—	$ 99,493	$139,493
Peggy V. Phillips	$65,000	—	$132,658	$197,658
Natale Ricciardi	$47,000	—	$132,658	$179,658
Elaine Sun	$12,500	$142,818	$390,326	$545,644

(1) Consists of fees earned or paid in 2021 for Board and committee membership as described above.

(2) Represents the aggregate grant date fair value of stock options and RSUs granted in the fiscal year in accordance with ASC 718. See note 15 of our ''Notes to Consolidated Financial Statements'' in our Annual Report on Form 10-K filed with the SEC on February 28, 2022, for a discussion of assumptions we made in determining the compensation costs included in this column. These amounts do not necessarily correspond to the actual value recognized or that may be recognized by the non-employee directors.

(3) As of December 31, 2021, each non-employee director held stock options and RSUs to purchase the following numbers of shares of our common stock: Mr. Myers held options to purchase 45,000 shares of our common stock and RSUs covering 10,714 shares of our common stock; Dr. Cano held options to purchase 116,550 shares of our common stock; Ms. Eastland held options to purchase 75,000 shares of our common stock; Dr. Hack held options to purchase 58,750 shares of our common stock; Dr. Kisner held options to purchase 120,950 shares of our common stock; Mr. MacGregor held options to purchase 75,000 shares of our common stock; Mr. Paradiso held options to purchase 68,750 shares of our common stock; Ms. Phillips held options to purchase 120,950 shares of our common stock; Mr. Ricciardi held options to purchase 107,750 shares of our common stock; and Ms. Sun held options to purchase 45,000 shares of our common stock and RSUs covering 10,714 shares of our common stock.

CORPORATE GOVERNANCE GUIDELINES

In February 2016, our Board adopted Corporate Governance Guidelines that set forth key principles to guide the Board in its exercise of responsibilities and serve the interests of the Company and our stockholders. The Corporate Governance Guidelines were reviewed and updated by the Board in February 2018. Our Corporate Governance Guidelines can be found on the Corporate Governance page under the Investors and Media – Corporate Governance section of our website at www.dynavax.com. In addition, these guidelines are available in print to any stockholder who requests a copy. Please direct all requests to our Corporate Secretary, Dynavax Technologies Corporation, 2100 Powell Street, Suite 900, Emeryville, California 94608.

ENVIRONMENTAL, SOCIAL AND GOVERNANCE MATTERS

Our Commitment. We are committed to conducting our business in compliance with all applicable legal and ethical standards. In addition, we are committed to helping to protect the environment.

Our Core Values. Our core values are deeply ingrained principles that guide our Company's actions and serve as our cultural cornerstones. As a developer and manufacturer of vaccines, we operate with the highest level of quality, integrity, and safety for the betterment of public health. These are paramount aspects of what we do every day. In addition, we strive to maintain a culture that is focused on creating an environment where each employee is valued by the organization and where our organization is valued by each employee. Below is a list of our core values.

- ***Committed To Doing What Is Right***: We approach all that we do with integrity and quality to ensure we maintain trust and credibility with patients, colleagues, and all of our stakeholders.
- ***Celebrate Individuals***: We recognize each team member as an individual, respecting who they are, and the combined value of everyone's unique perspectives and experiences.
- ***A Community Of Collaboration***: We provide support and encouragement to each other, both personally and professionally, to create a community focused on working together to accomplish our shared goals.
- ***Empower One Another To Make A Difference***: We operate from a place of trust and high expectations inspiring one another to take ownership, venture beyond the obvious, and to bring our best every day.
- ***Embrace The Challenge***: Together, as one team focused on results, we confront challenges with confidence and enthusiasm, never letting obstacles or hard work deter us from driving innovation.

Ethics and Compliance. Our Ethics and Compliance program includes our Code of Business Conduct and Ethics, which sets forth our expectations that all Dynavax employees globally conduct their business activities in a legal and ethical manner. The Code of Business Conduct and Ethics can be found on our website under the header ''Investors'' and within that under the header ''Corporate Governance Documents.'' We have a Chief Ethics and Compliance Officer, a Compliance Steering Committee and policies, procedures and training addressing specific aspects of our business, including advertising and promotion; engagements with healthcare providers; and regarding our business activities outside the United States to ensure they comply with the U.S. Foreign Corrupt Practices Act and all other applicable anti-corruption laws. We certify on an annual basis to having a comprehensive compliance program that meets the standards set forth under California law. This certification, which sets forth all of the elements of our healthcare compliance program, can be found on our website.

Environmental. We also care about the environment. To that end, our headquarters is in a building certified as ''Gold'' level on the LEED Scorecard as set forth by the United States Green Building Committee. Additionally, we offer incentives to our employees to utilize public transit in order to reduce traffic congestion and pollution and there is a free shuttle from our building to public transportation. Access to our offices has been limited to essential workers since the beginning of the pandemic. We do not plan to have our headquarter-based employees return to our headquarters on a full-time basis after the pandemic subsides and plan to embrace a flexible work model. This transition to a largely virtual environment further helps reduce congestion and pollution. Additionally, in March 2022, we signed a new lease to reduce the size of our headquarters office space which will further reduce our carbon footprint both in terms of energy consumption and less drivers driving to our office. For the automobile fleet for our sales force, we strive to keep the carbon footprint of the fleet low

through replacing vehicles roughly every three years to take advantage of the latest technology regarding fuel economy and miles per gallon efficiencies. In addition, we have an active recycling program. In our office and manufacturing facility in Germany, we offer incentives to our employees to lease bikes or e-bikes in order to reduce traffic congestion and pollution, and we strive to reduce energy consumption with a variety of measures including obtaining more than 90% of electrical power from renewable sources. We continue to consider other ways in which we can conduct our business in an environmentally friendly manner.

Development, Engagement and Diversity of Our Employees. The development and engagement of our employees is among the top priorities of the human resources team, and in 2021, 28 leaders and key contributors completed a leadership development program, in addition to the 80 leaders and key contributors that completed the program in the year prior.

In 2021, we offered a diversity and inclusion program called Awareness & Understanding in Action to our U.S.-based employees. This program consisted of five modules facilitated by an external Diversity, Equity and Inclusion (''DEI'') consultant. Later in the year, we implemented the following three global DEI Commitments:

- Fostering a culture where all employees are recognized and appreciated for the unique individuals they are and for their accomplishments in the workplace.
- Providing education to our employees on the negative effects of unconscious bias.
- Building and sustaining a team filled with a diversity of personal experiences, backgrounds, and perspectives.

We strive to create a diverse workforce and continue to work towards greater diversity in our workforce.

Community Involvement and Philanthropy. In 2021, we partnered with certain non-profit organizations committed to addressing the impact of poverty and inequality in our communities, and we added two additional paid days for our employees to volunteer in their communities each year. Additionally, from time to time, we make donations to support a variety of charitable organizations which we believe align with our core values.

STOCKHOLDER OUTREACH AND ENGAGEMENT

Our Board and management team value the views of our stockholders and we proactively engage with our major stockholders on a regular basis throughout the year. In addition, we seek feedback from the governance teams of our largest institutional stockholders each year. We believe our outreach efforts help ensure that our stockholders are aware of our governance initiatives and provide us with valuable feedback in order to enhance our governance practices and disclosure to stockholders. We contacted the governance teams of our largest institutional stockholders in early 2022. The bulk of the stockholders, while appreciating the outreach, did not feel a need to talk at the time. We spoke with 100% of the stockholders that wanted to provide us with feedback at that time. During these discussions, which included an opportunity for detailed questions, we engaged in meaningful dialog with these stockholder representatives about our corporate governance program.

MAJORITY VOTE POLICY

Our Corporate Governance Guidelines include a provision whereby any nominee for director in an uncontested election would submit an offer of resignation for consideration by the Nominating and Corporate Governance Committee of the Board, if such nominee receives a greater number of ''Withhold'' votes than ''For'' votes. The Nominating and Corporate Governance Committee would then consider all of the relevant facts and circumstances and recommend to the Board the action to be taken with respect to such offer of resignation. Promptly following the Board's decision, we would disclose that decision and an explanation of such decision in a filing with the SEC or a press release.

PLEDGING/HEDGING POLICY

We have a policy that prohibits our executive officers, directors and other members of management from engaging in short sales, transactions in put or call options, hedging transactions or other inherently speculative transactions with respect to our stock. No waivers of this policy were requested or provided during 2021.

BOARD DIVERSITY

Due to the global and diverse nature of our business, our Board believes it is important to consider whether a Board candidate assists in achieving a mix of Board members that represents a diversity of backgrounds and

experience, including with respect to age, gender, international background, race and specialized experience. Each year, our Nominating and Corporate Governance Committee reviews its Board membership criteria and assesses the composition of the Board against the criteria. During 2021 we added additional directors that not only brought in diverse backgrounds and professional experiences, but we also increased the diversity of our board further in terms of underrepresented minority and female membership. Below is an overview of our Board diversity as currently composed.

Board Diversity Matrix (As of April 4, 2022)				
Total Number of Directors	**11**			
	Female	**Male**	**Non-Binary**	**Did Not Disclose Gender**
Part I: Gender Identity				
Directors	3	8	—	—
Part II: Demographic Background				
African American or Black	—	—	—	—
Alaskan Native or Native American	—	—	—	—
Asian	1	—	—	—
Hispanic or Latinx	—	—	—	—
Native Hawaiian or Pacific Islander	—	—	—	—
White	2	8	—	—
Two or More Races or Ethnicities	—	—	—	—
LGBTQ+	—	—	—	—
Did Not Disclose Demographic Background	—	—	—	—

INDEPENDENCE OF THE BOARD OF DIRECTORS

As required under the Nasdaq Stock Market, or Nasdaq listing standards, and our Corporate Governance Guidelines, a majority of the members of a listed company's board of directors must qualify as ''independent,'' as affirmatively determined by the board of directors. In addition, applicable Nasdaq rules require that, subject to specified exceptions, each member of a listed company's audit, compensation and nominating committees be independent within the meaning of applicable Nasdaq rules. Audit committee members must also satisfy the independence criteria set forth in Rule 10A-3 under the Exchange Act.

Consistent with these considerations, our Board undertook a review of the independence of each director and considered whether any director has a material relationship that could compromise his or her ability to exercise independent judgment in carrying out his or her responsibilities. After review of all relevant transactions or relationships between each director, or any of his or her family members, and the Company, its senior management and its independent registered public accounting firm, the Board has affirmatively determined that the following directors are independent directors within the meaning of the applicable Nasdaq listing standards: Ms. Eastland, Mr. Meyers, Ms. Phillips, Ms. Sun, Mr. MacGregor and Mr. Ricciardi, as well as Drs. Cano, Hack, Kisner and Paradiso. In making this determination, our Board considered certain relationships and transactions that occurred in the ordinary course of business between the Company and entities with which some of our directors are or have been affiliated, including the affiliation of Dr. Hack with Bain Capital Life Sciences Fund, L.P. and BCIP Life Associates, L.P. (''Bain Life Sciences''), as a managing director of Bain Capital Life Sciences Investors, LLC, the general partner of Bain Life Sciences, a holder of 7.10% of our common stock. We also considered Dr. Paradiso's relationship to CEPI, as a member of its R&D Manufacturing Investment Committee, in light of the transaction entered into between the Company and CEPI in January of 2021, pursuant to which CEPI provided the Company, among other things, financing to manufacture our adjuvant, CpG 1018, in the form of a forgivable loan that we can and have drawn upon, and that CEPI partners will be able to buy CpG 1018 from us under certain prescribed terms as set forth in that same agreement. The Board determined that none of these transactions would impair Dr. Hack's or Dr. Paradiso's independence or interfere with the exercise of independent judgment in carrying out director responsibilities.

By virtue of his employment with the Company as Chief Executive Officer, Ryan Spencer is not an independent director.

BOARD LEADERSHIP STRUCTURE

Our Board is currently chaired by Scott Myers. The duties of the chairperson include presiding over all meetings of the Board; preparing the agenda for Board meetings in consultation with the Chief Executive Officer and other members of our Board; calling and presiding over meetings of non-employee directors; and managing the Board's process for annual evaluation of the Chief Executive Officer. Accordingly, the chairperson has substantial ability to shape the work of our Board. Our Board currently believes that separation of the positions of chairperson and Chief Executive Officer reinforces the independence of our Board in its oversight of our business and affairs. In addition, such separation helps create an environment that is more conducive to objective evaluation and oversight of management's performance, increasing management accountability and improving the ability of our Board to monitor whether management's actions are in the best interests of our Company and its stockholders.

Our Board also believes there may be advantages to having an independent chairperson for matters such as communications and relations between our Board, the Chief Executive Officer and other senior management and in assisting our Board in reaching consensus on particular strategies and policies. Having a chairperson separate from the Chief Executive Officer also allows the chairperson to focus on assisting the Chief Executive Officer and other senior management in seeking and adopting successful business strategies and risk management policies and in making successful choices in management succession.

BOARD'S ROLE IN RISK OVERSIGHT

Risk assessment and oversight are an integral part of our governance and management processes. Our Board encourages management to promote a culture that incorporates risk management into our corporate strategy and day-to-day business operations. Management discusses strategic and operational risks at regular management meetings, and conducts specific strategic planning and review sessions during the year that include a focused discussion and analysis of the risks facing the Company. For example, due to the public health concerns regarding the COVID-19 outbreak, our management required that all employees work from home, except for those who had to be in the office in order to complete their job function, and we assessed and made plans for potential supply chain risk and other potential impact on the business globally. We continue to monitor potential impact of the evolving COVID-19 situation on our business. Throughout the year, senior management reviews these risks with the Board at regular Board meetings as part of management presentations that focus on particular business functions, operations or strategies, and presents the steps taken by management to mitigate or eliminate such risks.

Our Board does not have a standing risk management committee but rather administers this oversight function directly through our Board as a whole as well as through various standing committees of our Board that address risks inherent in their respective areas of oversight. In particular, our Board is responsible for monitoring and assessing strategic risk exposure generally. Our Audit Committee has the responsibility to oversee our major financial risk exposures and the steps our management has taken to monitor and control these exposures as well as oversight of our enterprise risk management program. The Audit Committee also monitors compliance with legal and regulatory requirements, oversees the performance of our internal audit function and approves or disapproves any related-persons transactions. Furthermore, our Audit Committee also has responsibility for overseeing and assessing risk exposure relating to our healthcare compliance program pertaining to healthcare laws, regulations and industry standards applicable to pharmaceutical companies, a role that was previously administered by our full Board. Our Nominating and Corporate Governance Committee monitors the effectiveness of our corporate governance guidelines and manages the process for annual director self-assessment and evaluation of the Board. Our Compensation Committee assesses and monitors whether any of our compensation policies and programs has the potential to encourage excessive risk-taking.

MEETINGS OF THE BOARD OF DIRECTORS

During 2021, (i) our full Board met 8 times, (ii) our Audit Committee met 4 times, (iii) our Compensation Committee met 9 times and (iv) our Nominating and Corporate Governance Committee met 4 times. All Board members attended at least 75% or more of the aggregate of the meetings of the Board and of the committees on which the member served held during the period of service as a director or committee member.

COMMITTEES OF THE BOARD OF DIRECTORS

Our Board has three standing committees: an Audit Committee, a Compensation Committee and a Nominating and Corporate Governance Committee. The following table provides membership and meeting information for fiscal year 2021 for each of the Board committees:

Name	Audit	Compensation	Nominating and Corporate Governance
Scott Meyers			
Francis R. Cano, Ph.D.			Member
Julie Eastland	Chair*		
Andrew A. F. Hack, M.D., Ph.D.	Member*		
Daniel L. Kisner, M.D.		Member	Chair
Brent MacGregor			Member
Peter R. Paradiso			
Peggy V. Phillips	Member	Chair	
Natale Ricciardi		Member	
Elaine Sun			
Total Members	**3**	**3**	**3**
Total Meetings	**4**	**9**	**4**

* Qualified Audit Committee Financial Expert

Below is a description of each committee of our Board. Each of the committees has authority to engage legal counsel or other experts or consultants as it deems appropriate to carry out its responsibilities. Our Board has determined that each member of each committee meets the applicable Nasdaq listing standards and related rules and regulations regarding ''independence'' and that each member is free of any relationship that would impair his or her individual exercise of independent judgment with regard to the Company.

Audit Committee

In March 2021, Ms. Eastland became Chairperson of the Audit Committee and Dr. Hack, the prior Chairperson, remained a member. In addition to determining that all members of the Audit Committee are independent (as independence is currently defined in Rule 5605(c)(2)(A)(i) and (ii) of the Nasdaq listing standards), the Board determined that each of Ms. Eastland and Dr. Hack qualified as an ''audit committee financial expert,'' as defined in applicable SEC rules. The Board made a qualitative assessment of each of their level of knowledge and experience based on a number of factors, including their respective formal education and experience as a chief financial officer. The Audit Committee was established by the Board in accordance with Section 3(a)(58)(A) of the Exchange Act to oversee the Company's corporate accounting and financial reporting processes and audits of its financial statements. During 2021, the Audit Committee met on four occasions.

The Audit Committee operates under a written charter that is available on the Company's website at http://investors.dynavax.com/corporate-governance.

Among other things, the charter specifically requires our Audit Committee to:

- review and monitor the policies and procedures adopted by the Company to fulfill its responsibilities regarding the fair and accurate presentation of the Company's financial statements;
- appoint, compensate, and oversee the work of the Company's independent registered public accounting firm;
- approve and monitor all audit and non-audit services performed by the Company's independent registered public accounting firm;
- investigate, review and report the propriety and ethical implications of any transactions between the Company and any related persons;
- consult and discuss with management and the independent registered public accounting firm regarding the effectiveness of the Company's internal controls over financial reporting;

- establish procedures, as required under applicable law, for the receipt, retention and treatment of complaints received by the Company regarding accounting, internal controls or auditing matters and the confidential and anonymous submission by employees of concerns regarding questionable accounting or auditing matters;
- oversee the Company's healthcare compliance program;
- review and evaluate the Company's accounting principles and systems of internal controls; and
- review and discuss the disclosure of the Company's annual audited financial statements and quarterly financial statements, including reviewing the Company's disclosures under ''Management's Discussion and Analysis of Financial Condition and Results of Operations.''

Management is responsible for the financial reporting process, including the system of internal controls and for the preparation of consolidated financial statements in accordance with accounting principles generally accepted in the United States. Ernst & Young, the Company's independent registered public accounting firm, is responsible for auditing or reviewing those financial statements. The Audit Committee monitors and reviews these processes.

Report of the Audit Committee of the Board of Directors

The Audit Committee has reviewed and discussed the audited financial statements for the fiscal year ended December 31, 2021 with management of the Company. The Audit Committee has discussed with the independent registered public accounting firm the matters required to be discussed by the applicable requirements of the Public Company Accounting Oversight Board (''PCAOB'') and the SEC. The Audit Committee has also received the written disclosures and the letter from the independent registered public accounting firm required by applicable requirements of the PCAOB regarding the independent accountants' communications with the audit committee concerning independence and has discussed with the independent registered public accounting firm the accounting firm's independence. Based on the foregoing, the Audit Committee has recommended to the Board that the audited financial statements be included in the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2021.

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

Ms. Julie Eastland (Chairperson)
Andrew A. F. Hack, M.D., Ph.D.
Ms. Peggy V. Phillips

Compensation Committee

For 2021, our Compensation Committee was composed of three directors: Ms. Phillips (Chairperson), Dr. Kisner and Mr. Ricciardi. All members of the Compensation Committee are independent as required by Nasdaq Rule 5605(d) (as independence is currently defined in Rule 5605(a)(2) of the Nasdaq listing standards), are ''outside directors'' for purposes of Section 162(m) of the Code and are ''non-employee directors'' for purposes of Rule 16b-3 under the Exchange Act.

During 2021, the Compensation Committee held nine meetings. The Compensation Committee acts on behalf of the Board to review, recommend for adoption, and oversee the Company's compensation strategy, policies, plans and programs. The Compensation Committee operates under a written charter that is available on the Company's website at http://investors.dynavax.com/corporate-governance. Among other things, the charter specifically requires our Compensation Committee to:

- Annually review and approve the Company's corporate goals and objectives relevant to Chief Executive Officer compensation, evaluate the Chief Executive Officer's performance in light of such goals and objectives, and recommend to the Board the Chief Executive Officer's compensation level based on this evaluation. In determining the long-term incentive component of the Chief Executive Officer's compensation, the Compensation Committee will consider the Company's performance and relative stockholder return, the value of similar incentive awards to Chief Executive Officers at comparable companies, and the awards given to the Company's Chief Executive Officer in past years;

- annually review and make recommendations to the Board with respect to incentive compensation plans and equity-based plans;
- annually review Director compensation and make recommendation to the Board;
- administer the Company's incentive-compensation plans and equity-based plans as in effect and as adopted from time to time by the Board provided that the Board shall retain the authority to interpret such plans;
- annually review and approve for the Company's executive officers as defined in Rule 16a-1(f) of the Exchange Act: i) annual base salary levels; ii) annual incentive compensation levels; iii) long-term incentive compensation levels; and iv) employment agreements, severance agreements, change of control agreements/provisions and any other compensatory arrangements, in each case as, when and if appropriate;
- make regular reports to the Board; and
- perform such other functions and have such other powers consistent with the Compensation Committee Charter, the Company's Bylaws and governing laws as the Compensation Committee or the Board may deem appropriate.

Under its charter, our Compensation Committee may form, and delegate authority to, subcommittees, as appropriate. Our Compensation Committee has authorized and delegated authority to our Chief Executive Officer to grant stock options to employees and consultants who are not officers of the Company from pre-approved pools and in accordance with guidelines designated for new hire and annual grants. The purpose of this delegation is to enhance the flexibility of option administration within the Company and to facilitate the timely grant of options to non-executive employees, particularly new employees, within specified limits and values approved by our Compensation Committee.

Compensation Committee Interlocks and Insider Participation

None of the members of our Compensation Committee at any time has been one of our officers or employees or an officer or employee of one of our subsidiaries at any time during the fiscal year ended December 31, 2021. None of our executive officers currently serve, or in the past year has served, as a member of the board of directors or compensation committee of any entity that has one or more executive officers on our Board or Compensation Committee.

Nominating and Corporate Governance Committee

For 2021, our Nominating and Corporate Governance Committee was composed of three directors: Drs. Kisner (Chairperson) and Cano and Mr. MacGregor. All members of the Nominating and Corporate Governance Committee are independent (as independence is currently defined in Rule 5605(a)(2) of the Nasdaq listing standards). The Nominating and Corporate Governance Committee is responsible for identifying, reviewing and evaluating candidates to serve as directors of the Company (consistent with criteria approved by the Board), reviewing and evaluating incumbent directors and identifying with the Chief Executive Officer candidates for appointment or election to the Board.

In identifying potential director candidates, the Nominating and Corporate Governance Committee considers Board candidates through a variety of methods and sources. These include suggestions from current Board members, senior management, stockholders, professional search firms and other sources. At this time, the Nominating and Corporate Governance Committee does not have a policy with regard to the consideration of director candidates recommended by stockholders. While the Nominating and Corporate Governance Committee does not have such a formal policy, it will consider such a recommendation, as reflected by its decision to recommend Mr. Ricciardi to the Board following a stockholder recommendation. Our Board believes that it is appropriate that the Nominating and Corporate Governance Committee does not have such a policy because the Nominating and Corporate Governance Committee reviews all candidates in the same manner regardless of the source of the recommendation. In the case of a new director candidate, the Nominating and Corporate Governance Committee also determines whether the nominee is independent based upon applicable Nasdaq listing standards, applicable SEC rules and regulations and the advice of counsel, if necessary. Among the qualifications to be considered in the selection of candidates are broad experience in business, finance or

administration, familiarity with the Company's industry, and prominence and reputation. Since prominence and reputation in a particular profession or field of endeavor are what bring most persons to the Board's attention, there is further consideration of whether the individual has the time available to devote to the work of the Board and one or more of its committees. In addition, our Nominating and Corporate Governance Committee will consider whether the candidate assists in achieving a mix of members that represents a diversity of backgrounds and experience, including with respect to age, gender, international background, race and specialized experience. Each year, our Nominating and Corporate Governance Committee reviews its Board membership criteria and assesses the composition of the Board against the criteria.

The members of the Nominating and Corporate Governance Committee informally discussed committee business a number of times during the year and the Nominating and Corporate Governance Committee held four formal meetings during 2021. The Nominating and Corporate Governance Committee has adopted a written charter that is available to stockholders on the Company's website at http://investors.dynavax.com/corporate-governance.

STOCKHOLDER COMMUNICATIONS WITH THE BOARD OF DIRECTORS

Stockholders may communicate with our Board by directing comments, concerns, and questions to the Corporate Secretary at Dynavax Technologies Corporation, 2100 Powell Street, Suite 900, Emeryville, California 94608. Communications will be distributed to the Board, or to any individual directors as appropriate, depending on the facts and circumstances outlined in the communication. In that regard, our Board has requested that certain items that are unrelated to the duties and responsibilities of the Board be filtered, including product complaints or inquiries, new product suggestions, résumés and other forms of job inquiries, surveys, or business solicitations or advertisements. In addition, material that is unduly hostile, threatening, illegal or similarly unsuitable will be excluded, with the provision that any communication that is filtered out must be made available to any non-employee director upon request. Stockholders may also communicate with our Board as a group through our website at https://investors.dynavax.com/corporate-governance/contact-the-board. All communications directed to the Audit Committee in accordance with our whistleblower policy that relate to questionable accounting or auditing matters involving the Company will be promptly and directly forwarded to the chairperson of the Audit Committee. Every effort has been made to ensure that the views of stockholders are heard by the Board or individual directors, as applicable, and that appropriate responses are provided to stockholders in a timely manner.

CERTAIN TRANSACTIONS

Except as described below, since January 1, 2021, there has not been, nor is there currently proposed, any transaction or series of similar transactions to which the Company was or is to be a party in which the amount involved exceeds $120,000 and in which any current director, executive officer, holder of more than 5% of our common stock or any immediate family member of any of the foregoing persons had or will have a direct or indirect material interest other than compensation arrangements, described under the sections entitled "Executive Compensation" and "Director Compensation," and with respect to the indemnification agreements described below.

Related Persons Transactions and Indemnification

Policies and Procedures for Related Person Transactions

Our Audit Committee is responsible for reviewing and approving all related party transactions, which would include a transaction, arrangement or relationship (or any series of similar transactions, arrangements or relationships) in which we and any "related person" are participants involving an amount that exceeds $120,000, not including transactions involving compensation for services provided to Dynavax as an employee, director, consultant or similar capacity by a related person. Related parties include any of our directors or executive officers, certain of our stockholders and their immediate family members. This obligation is set forth in writing in the Audit Committee charter. A copy of the Audit Committee charter is available on the Company's website at http://investors.dynavax.com/corporate-governance.

Where a transaction has been identified as a related-person transaction, management would present information regarding the proposed related-person transaction to the Audit Committee (or, where Audit Committee approval would be inappropriate, to another independent body of the Board) for consideration and approval or ratification. The presentation would include a description of, among other things, the material facts, the interests, direct and indirect, of the related persons, the benefits to Dynavax of the transaction and whether any alternative transactions were available. To identify related-person transactions in advance, the Audit Committee relies on information supplied by our executive officers and directors. In considering related-person transactions, the Audit Committee takes into account the relevant available facts and circumstances including, but not limited to (a) the risks, costs and benefits to Dynavax, (b) the impact on a director's independence in the event the related person is a director, immediate family member of a director or an entity with which a director is affiliated, (c) the terms of the transaction, (d) the availability of other sources for comparable services or products and (e) the terms available to or from, as the case may be, unrelated third parties or to or from employees generally. In the event a director has an interest in the proposed transaction, the director must recuse himself or herself from the deliberations and approval. In determining whether to approve, ratify or reject a related-person transaction, the Audit Committee considers, in light of known circumstances, whether the transaction is, or is not, consistent with the best interests of Dynavax and our stockholders, as the Audit Committee determines in the good faith exercise of its discretion.

Indemnity Agreements

We have entered into indemnity agreements with some of our officers and directors so that they will be free from undue concern about personal liability in connection with their service to the Company. The indemnity agreements provide, among other things, that the Company will indemnify such officer or director, under the circumstances and to the extent provided for therein, for expenses, damages, judgments, fines and settlements he or she may be required to pay in actions or proceedings which he or she is or may be made a party by reason of his or her position as a director, officer or other agent of the Company, and otherwise to the fullest extent permitted under Delaware law.

CODE OF BUSINESS CONDUCT AND ETHICS

We have adopted the Dynavax Code of Business Conduct and Ethics that applies to all officers, directors and employees. Our Code of Business Conduct and Ethics is available on our website at http://investors.dynavax.com/corporate-governance and upon written request. We will provide a written copy of the Dynavax Code of Business Conduct and Ethics to anyone without charge, upon request written to Dynavax Technologies Corporation, Attention: Corporate Secretary, 2100 Powell Street, Suite 900, Emeryville, California 94608, or contact Dynavax's Corporate Secretary at (510) 848-5100. If we make any substantive amendments to or grant any waiver from a provision of the Code of Business Conduct and Ethics to any executive officer or director, we will promptly disclose the nature of the amendment or waiver on our website. There have been no waivers under the Code of Business Conduct and Ethics as of the date of filing of this proxy statement.

SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

The following table sets forth certain information regarding the ownership of the Company's common stock as of January 31, 2022 by: (i) each director and nominee for director; (ii) the NEOs; (iii) all executive officers and directors of the Company as a group; and (iv) all those known by the Company to be beneficial owners of more than five percent of its common stock.

Name and Address of Beneficial Holder	Number of Shares [2]	Percent of Shares Beneficially Owned [3]
5% Stockholders		
Federated Hermes, Inc.[4]	16,782,838	13.92%
State Street Corporation[5]	6,245,356	5.21%
Bain Capital Life Sciences Fund, L.P.[6]	8,443,750	7.10%
BlackRock, Inc.[7]	7,868,324	6.60%
NEOs and Directors[1]		
Ryan Spencer[8]	855,608	*
David F. Novack[9]	869,147	*
Michael S. Ostrach[10]	668,235	*
Kelly MacDonald[11]	126,388	*
Robert Janssen, M.D.[12]	405,082	*
Francis R. Cano, Ph.D.[13]	112,384	*
Julia M. Eastland[14]	16,667	*
Andrew A. F. Hack, M.D., Ph.D.[15]	8,443,750	7.1%
Daniel L. Kisner, M.D.[16]	97,450	*
Brent MacGregor[17]	16,667	*
Scott Myers	—	*
Peter R. Paradiso[18]	19,667	*
Peggy V. Phillips[19]	123,683	*
Natale Ricciardi[20]	82,750	*
Elaine D. Sun	—	*
All executive officers and directors as a group (15 persons)[21]	11,837,478	9.31%

* Less than one percent.

(1) The address of each of the NEOs and directors is c/o Dynavax Technologies Corporation, 2100 Powell Street, Suite 900, Emeryville, California 94608.

(2) To our knowledge, except as set forth in the footnotes to this table, and subject to applicable community property laws, each person named in this table has sole voting and investment power with respect to the shares set forth opposite such person's name.

(3) Beneficial ownership is determined in accordance with the rules of the SEC and generally includes voting or investment power with respect to the securities. Shares of our common stock subject to options currently exercisable or that will become exercisable within 60 days after January 31, 2022, are deemed outstanding for computing the percentage of the person holding such options but are not deemed outstanding for computing the percentage of any other person. Applicable percentages are based on 123,956,363 shares of our common stock outstanding as of January 31, 2022, adjusted as required by the rules of the SEC.

(4) This information is based solely on a Schedule 13G/A filed by Federated Hermes, Inc. on February 14, 2022, with the SEC. Federated Hermes, Inc. beneficially owns 16,782,838 shares and has sole dispositive or sole voting power. Federated Hermes, Inc.'s outstanding voting stock is held in the voting shares irrevocable trust for which Thomas R. Donahue, Rhodora J. Donahue and J. Christopher Donahue (the ''Trustees'') act as trustees. Each of the Trustees has collective voting control over Federated Hermes, Inc. The address of the principal business and office of Federated Hermes, Inc. and each of the Trustees is 1001 Liberty Avenue, Pittsburgh, PA 15222-3779. The Schedule 13G/A provides information only as of December 31, 2021, and consequently, the beneficial ownership of the above-mentioned reporting person may have changed between December 31, 2021, and January 31, 2022.

(5) This information is based solely on a Schedule 13G/A filed by State Street Corporation on February 11, 2022, with the SEC. State Street Corporation beneficially owns 6,245,356 shares and has no sole dispositive or sole voting power. The address of the principal business and office of State Street Corp. is, One Lincoln Street, Boston, MA 02111. The Schedule 13G/A provides information only as of December 31, 2021, and, consequently, the beneficial ownership of the above-mentioned reporting person may have changed between December 31, 2021, and January 31, 2022.

(6) This information is based primarily on a Schedule 13D/A filed by Bain Capital Life Sciences Fund, L.P. on August 27, 2021, with the SEC. Bain Capital Life Sciences Fund L.P. holds 7,634,045 shares of common stock and has no sole dispositive or sole voting power. BCIP Life Sciences Associates, LP holds 780,955 shares of common stock and has no sole dispositive or sole voting power. Also includes 28,750 options held by Dr. Hack for the benefit of Bain Capital Life Sciences Fund, L.P. Bain Capital Life Sciences Investors,

LLC (“BCLSI”) is the ultimate general partner of Bain Capital Life Sciences Fund, L.P. and governs the investment strategy and decision-making process with respect to investments held by BCIP Life Sciences Associates, LP. Boylston Coinvestors, LLC is the general partner of BCIP Life Sciences Associates, LP. Jeffrey Schwartz and Adam Koppel are the managers of BCLSI and may be deemed to share voting and dispositive power with respect to the securities held by Bain Capital Life Sciences Fund, L.P. and BCIP Life Sciences Associates, LP. The address of the principal business and office of BCLSI, Bain Capital Life Sciences Fund, L.P. and BCIP Life Sciences Associates, LP is 200 Clarendon Street, Boston, MA 02116. The Schedule 13D/A provides information only as of August 27, 2021 and, consequently, the beneficial ownership of the above-mentioned reporting person may have changed between August 27, 2021 and January 31, 2022.

(7) This information is based solely on Schedule 13G/A filed by BlackRock, Inc. on February 1, 2022, with the SEC. BlackRock, Inc. beneficially owns and has sole dispositive power over 7,868,324 shares of common stock, of which 7,659,797 shares are held with sole voting power. The address of the principal business and office of BlackRock, Inc. is, 55 East 52nd Street, New York, NY 10055. The Schedule 13G/A provides information only as of December 31, 2021, and consequently, the beneficial ownership of the above-mentioned reporting person may have changed between December 31, 2021, and January 31, 2022.

(8) Consists of 71,589 shares of common stock owned directly by Mr. Spencer and includes time-based restricted stock units to be converted into 50,583 shares of common stock, performance-based restricted stock units to be converted into 128,800 shares of common stock and options to purchase 604,636 shares of common stock exercisable within 60 days of January 31, 2022.

(9) Consists of 44,066 shares of common stock owned directly by Mr. Novack and includes time-based restricted stock units to be converted into 17,500 shares of common stock, performance-based restricted stock units to be converted into 87,500 shares of common stock and options to purchase 720,081 shares of common stock exercisable within 60 days of January 31, 2022.

(10) Consists of 84,367 shares of common stock owned directly by Mr. Ostrach and options to purchase 583,868 shares of common stock exercisable within 60 days of January 31, 2022.

(11) Consists of options to purchase 126,388 shares of common stock exercisable within 60 days of January 31, 2022.

(12) Consists of 8,276 shares of common stock owned directly by Dr. Janssen and includes time-based restricted stock units to be converted into 10,000 shares of common stock, performance-based restricted stock units to be converted into 55,000 shares of common stock and options to purchase 331,806 shares of common stock exercisable within 60 days of January 31, 2022.

(13) Consists of 20,834 shares of common stock owned directly by Dr. Cano, options to purchase 91,550 shares of common stock exercisable within 60 days of January 31, 2022.

(14) Consists of options to purchase 16,667 shares of common stock exercisable within 60 days of January 31, 2022.

(15) This information is based primarily on a Schedule 13D/A filed by Bain Capital Life Sciences Fund, L.P. on August 27, 2021, with the SEC. Bain Capital Life Sciences Fund L.P. holds 7,634,045 shares of common stock BCIP Life Sciences Associates, LP holds 780,955 shares of common stock. Also includes 28,750 options held by Dr. Hack for the benefit of Bain Capital Life Sciences Fund, L.P. Dr. Hack is a Managing Director of BCLSI. By virtue of these relationships, Dr. Hack may be deemed to share voting and dispositive power with respect to shares of common stock held by Bain Capital Life Sciences Fund L.P. and BCIP Life Sciences Associates, LP. Dr. Hack disclaims beneficial ownership of such securities except to the extent of his pecuniary interest therein.

(16) Consists of 1,500 shares of common stock owned directly by Dr. Kisner and options to purchase 95,950 shares of common stock exercisable within 60 days of January 31, 2022.

(17) Consists of options to purchase 16,667 shares of common stock exercisable within 60 days of January 31, 2022.

(18) Consists of 3,000 shares of common stock owned directly by Mr. Paradiso and options to purchase 16,667 shares of common stock exercisable within 60 days of January 31, 2022.

(19) Consists of 27,733 shares of common stock owned directly by Ms. Phillips and options to purchase 95,950 shares of common stock exercisable within 60 days of January 31, 2022.

(20) Consists of options to purchase 82,750 shares of common stock exercisable within 60 days of January 31, 2022.

(21) Total number of shares includes common stock, in aggregate, held as of January 31, 2022, by our executive officers and directors and entities affiliated with such executive officers and directors. Also includes restricted stock awards to be converted into 349,383 shares of common stock within 60 days of January 31, 2022, and options to purchase 2,227,862 shares of common stock exercisable within 60 days of January 31, 2022.

HOUSEHOLDING OF PROXY MATERIALS

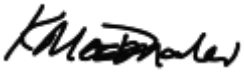
The SEC has adopted rules that permit companies and intermediaries (e.g., brokers) to satisfy the delivery requirements for Notices of Internet Availability of Proxy Materials or other annual meeting materials with respect to two or more stockholders sharing the same address by delivering a single Notice of Internet Availability of Proxy Materials or other annual meeting 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.

This year, a number of brokers with account holders who are Dynavax stockholders will be ''householding'' the Company's proxy materials. A single Notice of Internet Availability of Proxy Materials will 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 until you revoke your consent. If, at any time, you no longer wish to participate in ''householding'' and would prefer to receive a separate Notice of Internet Availability of Proxy Materials, please notify your broker or Dynavax. Direct your written request to Dynavax Technologies Corporation, Attention: Corporate Secretary, 2100 Powell Street, Suite 900, Emeryville, California 94608, or contact Dynavax's Corporate Secretary at (510) 848-5100. Stockholders who currently receive multiple copies of the Annual Meeting materials at their addresses and would like to request ''householding'' of their communications should contact their brokers.

OTHER MATTERS

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 Annual 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



Kelly MacDonald
Chief Financial Officer

April 14, 2022

A copy of the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2021, is available without charge upon written request to: Dynavax Technologies Corporation, Attention: Corporate Secretary, 2100 Powell Street, Suite 900, Emeryville, California 94608.

Appendix A

DYNAVAX TECHNOLOGIES CORPORATION
2018 EQUITY INCENTIVE PLAN

ADOPTED BY THE BOARD OF DIRECTORS: APRIL 8, 2018
APPROVED BY THE STOCKHOLDERS: MAY 31, 2018
AMENDED AND RESTATED BY THE BOARD OF DIRECTORS: APRIL 9, 2019
APPROVED BY THE STOCKHOLDERS: MAY 30, 2019
AMENDED AND RESTATED BY THE BOARD OF DIRECTORS: APRIL 3, 2020
APPROVED BY THE STOCKHOLDERS: MAY 28, 2020
AMENDED AND RESTATED BY THE BOARD OF DIRECTORS: APRIL 1, 2022
[APPROVED BY THE STOCKHOLDERS: MAY 26, 2022]

1. GENERAL.

(a) Successor to and Continuation of 2011 Plan. The Plan is intended as the successor to and continuation of the Dynavax Technologies Corporation 2011 Equity Incentive Plan (the "***2011 Plan***"). Following the Effective Date, no additional awards may be granted under the 2011 Plan or the Dynavax Technologies Corporation 2017 Inducement Award Plan (the "***2017 Inducement Plan***"), and following April 3, 2022, no additional awards may be granted under the Dynavax Technologies Corporation 2021 Inducement Award Plan (the "***2021 Inducement Plan***") (each of the 2011 Plan, 2017 Inducement Plan and 2021 Inducement Plan, a "***Prior Plan***"). Any unallocated shares remaining available for grant under the 2011 Plan as of 12:01 a.m. Pacific Time on the Effective Date (the "***2011 Plan's Available Reserve***") will cease to be available under the 2011 Plan at such time and will be added to the Share Reserve (as defined in Section 3(a)(i)) and be then immediately available for grant and issuance pursuant to Awards granted under this Plan. From and after 12:01 a.m. Pacific Time on the Effective Date with respect to awards granted under the 2011 Plan or 2017 Inducement Plan, and from and after 12:01 a.m. Pacific Time on the date of the Company's 2022 Annual Meeting of Stockholders with respect to awards granted under the 2021 Inducement Plan, except as provided in Sections 9(c), 9(d) and 9(e), all outstanding stock awards granted under any of the Prior Plans (each, a "***Prior Plan Award***") will remain subject to the terms of the applicable Prior Plan; *provided, however*, that the following shares of Common Stock subject to any outstanding Prior Plan Award (collectively, the "***Prior Plans' Returning Shares***") will immediately be added to the Share Reserve (as defined in Section 3(a)(i)) as and when such shares become Prior Plans' Returning Shares and will become available for grant and issuance pursuant to Awards granted under this Plan: (i) any shares subject to such stock award that are not issued because such stock award or any portion thereof expires or otherwise terminates without all of the shares covered by such stock award having been issued; (ii) any shares subject to such stock award that are not issued because such stock award or any portion thereof is settled in cash; and (iii) any shares issued pursuant to such stock award that are forfeited back to or repurchased by the Company because of the failure to meet a contingency or condition required for the vesting of such shares. All Awards granted on or after 12:01 a.m. Pacific Time on the Effective Date will be subject to the terms of this Plan.

(b) Eligible Award Recipients. Subject to Section 4, Employees and Directors are eligible to receive Awards.

(c) Available Awards. The Plan provides for the grant of the following types of Awards: (i) Incentive Stock Options; (ii) Nonstatutory Stock Options; (iii) Stock Appreciation Rights; (iv) Restricted Stock Awards; (v) Restricted Stock Unit Awards; (vi) Performance Stock Awards; and (vii) Other Stock Awards.

(d) Purpose. The Plan, through the granting of Awards, is intended to help the Company and any Affiliate secure and retain the services of eligible award recipients, provide incentives for such persons to exert maximum efforts for the success of the Company and any Affiliate and provide a means by which such persons may benefit from increases in value of the Common Stock.

2. ADMINISTRATION.

(a) Administration by Board. The Board will administer the Plan. The Board may delegate administration of the Plan to a Committee or Committees, as provided in Section 2(c).

(b) Powers of Board. The Board will have the power, subject to, and within the limitations of, the express provisions of the Plan:

(i) To determine (A) who will be granted Awards, (B) when and how each Award will be granted, (C) what type of Award will be granted, (D) the provisions of each Award (which need not be identical), including when a Participant will be permitted to exercise or otherwise receive cash or Common Stock under the Award, (E) the number of shares of Common Stock subject to, or the cash value of, an Award, and (F) the Fair Market Value applicable to an Award.

(ii) To construe and interpret the Plan and Awards granted under it, and to establish, amend and revoke rules and regulations for administration of the Plan and Awards. The Board, in the exercise of these powers, may correct any defect, omission or inconsistency in the Plan or in any Award Agreement, in a manner and to the extent it will deem necessary or expedient to make the Plan or Award fully effective.

(iii) To settle all controversies regarding the Plan and Awards granted under it.

(iv) To accelerate, in whole or in part, the time at which an Award may be exercised or vest (or at which cash or shares of Common Stock may be issued in settlement thereof).

(v) To suspend or terminate the Plan at any time. Except as otherwise provided in the Plan (including Section 2(b)(viii)) or an Award Agreement, suspension or termination of the Plan will not materially impair a Participant's rights under an outstanding Award without his or her written consent.

(vi) To amend the Plan in any respect the Board deems necessary or advisable, including, without limitation, by adopting amendments relating to Incentive Stock Options and certain nonqualified deferred compensation under Section 409A of the Code and/or to make the Plan or Awards granted under the Plan compliant with the requirements for Incentive Stock Options or exempt from or compliant with the requirements for nonqualified deferred compensation under Section 409A of the Code, subject to the limitations, if any, of applicable law. However, if required by applicable law or listing requirements, and except as provided in Section 9(a) relating to Capitalization Adjustments, the Company will seek stockholder approval of any amendment of the Plan that (A) materially increases the number of shares of Common Stock available for issuance under the Plan, (B) materially expands the class of individuals eligible to receive Awards under the Plan, (C) materially increases the benefits accruing to Participants under the Plan, (D) materially reduces the price at which shares of Common Stock may be issued or purchased under the Plan, or (E) materially expands the types of Awards available for issuance under the Plan. Except as otherwise provided in the Plan (including Section 2(b)(viii)) or an Award Agreement, no amendment of the Plan will materially impair a Participant's rights under an outstanding Award without his or her written consent.

(vii) To submit any amendment to the Plan for stockholder approval, including, but not limited to, amendments to the Plan intended to satisfy the requirements of (A) Section 422 of the Code regarding incentive stock options or (B) Rule 16b-3.

(viii) To approve forms of Award Agreements for use under the Plan and to amend the terms of any one or more outstanding Awards, including, but not limited to, amendments to provide terms more favorable to the Participant than previously provided in the Award Agreement, subject to any specified limits in the Plan that are not subject to Board discretion; *provided, however,* that except as otherwise provided in the Plan (including this Section 2(b)(viii)) or an Award Agreement, no amendment of an outstanding Award will materially impair a Participant's rights under such Award without his or her written consent.

Notwithstanding the foregoing or anything in the Plan to the contrary, unless prohibited by applicable law, the Board may amend the terms of any outstanding Award or the Plan, or may suspend or terminate the Plan, without the affected Participant's consent, (A) to maintain the qualified status of the Award as an Incentive Stock Option under Section 422 of the Code, (B) to change the terms of an Incentive Stock Option, if such change results in impairment of the Award solely because it impairs the qualified status of the Award as an Incentive Stock Option under Section 422 of the Code, (C) to clarify the manner of exemption from, or to bring the Award or the Plan into compliance with, Section 409A of the Code or (D) to comply with other applicable laws or listing requirements.

(ix) Generally, to exercise such powers and to perform such acts as the Board deems necessary or expedient to promote the best interests of the Company and that are not in conflict with the provisions of the Plan or Awards.

(x) To adopt such procedures and sub-plans as are necessary or appropriate to permit participation in the Plan by Employees or Directors who are foreign nationals or employed outside the United States (provided that Board approval will not be necessary for immaterial modifications to the Plan or any Award Agreement that are required for compliance with the laws of the relevant foreign jurisdiction).

(c) Delegation to Committee.

(i)General. The Board may delegate some or all of the administration of the Plan to a Committee or Committees. If administration of the Plan is delegated to a Committee, the Committee will have, in connection with the administration of the Plan, the powers theretofore possessed by the Board that have been delegated to the Committee, including the power to delegate to a subcommittee of the Committee any of the administrative powers the Committee is authorized to exercise (and references in this Plan to the Board will thereafter be to the Committee or subcommittee, as applicable). Any delegation of administrative powers will be reflected in resolutions, not inconsistent with the provisions of the Plan, adopted from time to time by the Board or Committee (as applicable). The Committee may, at any time, abolish the subcommittee and/or revest in the Committee any powers delegated to the subcommittee. The Board may retain the authority to concurrently administer the Plan with the Committee and may, at any time, revest in the Board some or all of the powers previously delegated.

(ii) Rule 16b-3 Compliance. The Committee may consist solely of two or more Non-Employee Directors in accordance with Rule 16b-3.

(d) Delegation to an Officer. The Board may delegate to one or more Officers the authority to do one or both of the following: (i) designate Employees who are not Officers to be recipients of Options and SARs (and, to the extent permitted by applicable law, other Awards) and, to the extent permitted by applicable law, the terms of such Awards; and (ii) determine the number of shares of Common Stock to be subject to such Awards granted to such Employees; *provided, however*, that the Board resolutions regarding such delegation will specify the total number of shares of Common Stock that may be subject to the Awards granted by such Officer and that such Officer may not grant an Award to himself or herself. Any such Awards will be granted on the form of Award Agreement most recently approved for use by the Committee or the Board, unless otherwise provided in the resolutions approving the delegation of authority. The Board may not delegate authority to an Officer who is acting solely in the capacity of an Officer (and not also as a Director) to determine the Fair Market Value of the Common Stock pursuant to Section 13(w)(iii).

(e) Effect of Board's Decision. All determinations, interpretations and constructions made by the Board in good faith will not be subject to review by any person and will be final, binding and conclusive on all persons.

(f) Cancellation and Re-Grant of Awards. Neither the Board nor any Committee will have the authority to (i) reduce the exercise or strike price of any outstanding Option or SAR or (ii) cancel any outstanding Option or SAR that has an exercise or strike price (per share) greater than the then-current Fair Market Value of the Common Stock in exchange for cash or other Awards under the Plan, unless the stockholders of the Company have approved such an action within 12 months prior to such an event.

(g) Minimum Vesting Requirements. No Award may vest (or, if applicable, be exercisable) until at least 12 months following the date of grant of the Award; *provided, however*, that shares of Common Stock up to 5% of the Share Reserve (as defined in Section 3(a)(i)) may be issued pursuant to Awards that do not meet such vesting (and, if applicable, exercisability) requirements.

(h) Dividends and Dividend Equivalents. Dividends or dividend equivalents may be paid or credited, as applicable, with respect to any shares of Common Stock subject to an Award, as determined by the Board and contained in the applicable Award Agreement; *provided, however*, that (i) no dividends or dividend equivalents may be paid with respect to any such shares before the date such shares have vested under the terms of such Award Agreement, (ii) any dividends or dividend equivalents that are credited with respect to any such shares will be subject to all of the terms and conditions applicable to such shares under the terms of such Award

Agreement (including, but not limited to, any vesting conditions), and (iii) any dividends or dividend equivalents that are credited with respect to any such shares will be forfeited to the Company on the date, if any, such shares are forfeited to or repurchased by the Company due to a failure to meet any vesting conditions under the terms of such Award Agreement.

3. SHARES SUBJECT TO THE PLAN.

(a) Share Reserve.

(i) Subject to Section 3(a)(iii) and Section 9(a) relating to Capitalization Adjustments, the aggregate number of shares of Common Stock that may be issued pursuant to Awards from and after the Effective Date will not exceed (A) 30,040,250 shares (which number is the sum of (i) the number of shares (140,250) subject to the 2011 Plan's Available Reserve, (ii) an additional 5,000,000 shares that were approved at the Company's 2018 Annual Meeting of Stockholders, (iii) an additional 2,300,000 shares that were approved at the Company's 2019 Annual Meeting of Stockholders, (iv) an additional 7,600,000 shares that were approved at the Company's 2020 Annual Meeting of Stockholders, and (v) an additional 15,000,000 shares that were approved at the Company's 2022 Annual Meeting of Stockholders), *plus* (B) the Prior Plans' Returning Shares, if any, which become available for issuance under this Plan from time to time (such aggregate number of shares described in (A) and (B), the "***Share Reserve***").

(ii) Subject to Section 3(b), the number of shares of Common Stock available for issuance under the Plan will be reduced by: (A) one share for each share of Common Stock issued pursuant to an Appreciation Award granted under the Plan; (B) 1.28 shares for each share of Common Stock issued pursuant to a Full Value Award granted under the Plan prior to May 30, 2019; and (C) 1.40 shares for each share of Common Stock issued pursuant to a Full Value Award granted under the Plan on or after May 30, 2019.

(iii) Subject to Section 3(b), the number of shares of Common Stock available for issuance under the Plan will be increased by: (A) one share for each Prior Plans' Returning Share or 2018 Plan Returning Share (as defined in Section 3(b)(i)) subject to an Appreciation Award; (B) 1.28 shares for each Prior Plans' Returning Share or 2018 Plan Returning Share subject to a Full Value Award that returns to the Plan prior to May 30, 2019; and (C) 1.40 shares for each Prior Plans' Returning Share or 2018 Plan Returning Share subject to a Full Value Award that returns to the Plan on or after May 30, 2019.

(iv) For clarity, the Share Reserve in this Section 3(a) is a limitation on the number of shares of Common Stock that may be issued pursuant to the Plan. Accordingly, this Section 3(a) does not limit the granting of Awards except as provided in Section 7(a). Shares may be issued in connection with a merger or acquisition as permitted by Nasdaq Listing Rule 5635(c) or, if applicable, NYSE Listed Company Manual Section 303A.08, AMEX Company Guide Section 711 or other applicable rule, and such issuance will not reduce the number of shares available for issuance under the Plan.

(b) Reversion of Shares to the Share Reserve.

(i) Shares Available for Subsequent Issuance. The following shares of Common Stock (collectively, the "2018 Plan Returning Shares") will become available again for issuance under the Plan: (A) any shares subject to an Award that are not issued because such Award or any portion thereof expires or otherwise terminates without all of the shares covered by such Award having been issued; (B) any shares subject to an Award that are not issued because such Award or any portion thereof is settled in cash; and (C) any shares issued pursuant to an Award that are forfeited back to or repurchased by the Company because of the failure to meet a contingency or condition required for the vesting of such shares.

(ii) Shares Not Available for Subsequent Issuance. The following shares of Common Stock will not become available again for issuance under the Plan: (A) any shares that are reacquired or withheld (or not issued) by the Company to satisfy the exercise, strike or purchase price of an Award or a Prior Plan Award (including any shares subject to such award that are not delivered because such award is exercised through a reduction of shares subject to such award (*i.e.*, "net exercised")); (B) any shares that are reacquired or withheld (or not issued) by the Company to satisfy a tax withholding obligation in connection with an Award or a Prior Plan Award; (C) any shares repurchased by the Company on the open market with the

proceeds of the exercise, strike or purchase price of an Award or a Prior Plan Award; and (D) in the event that a Stock Appreciation Right granted under the Plan or a stock appreciation right granted under any of the Prior Plans is settled in shares of Common Stock, the gross number of shares of Common Stock subject to such award.

(c) Incentive Stock Option Limit. Subject to the Share Reserve and Section 9(a) relating to Capitalization Adjustments, the aggregate maximum number of shares of Common Stock that may be issued pursuant to the exercise of Incentive Stock Options will be 32,600,000 shares.

(d) Non-Employee Director Compensation Limit. The aggregate value of all cash and equity-based compensation granted or paid, as applicable, by the Company to any individual for service as a Non-Employee Director with respect to any fiscal year of the Company will not exceed: (i) a total of $200,000 with respect to any such cash compensation; and (ii) $800,000 in total value with respect to any such equity-based compensation (including Awards and any other equity-based awards), provided that for any individual who is first appointed or elected to the Board as a Non-Employee Director during any fiscal year of the Company, the limit for such individual's equity-based compensation will be $1,200,000 with respect to such fiscal year, in each case calculating the value of any such awards based on the grant date fair value of such awards for financial reporting purposes.

(e) Source of Shares. The stock issuable under the Plan will be shares of authorized but unissued or reacquired Common Stock, including shares repurchased by the Company on the open market or otherwise.

4. ELIGIBILITY.

(a) Eligibility for Specific Awards. Incentive Stock Options may be granted only to employees of the Company or a ''parent corporation'' or ''subsidiary corporation'' thereof (as such terms are defined in Sections 424(e) and 424(f) of the Code). Awards other than Incentive Stock Options may be granted to Employees and Directors; *provided, however*, that Awards may not be granted to Employees and Directors who are providing Continuous Service only to any ''parent'' of the Company, as such term is defined in Rule 405, unless (i) the stock underlying such Awards is treated as ''service recipient stock'' under Section 409A of the Code (for example, because the Awards are granted pursuant to a corporate transaction such as a spin off transaction) or (ii) the Company, in consultation with its legal counsel, has determined that such Awards are otherwise exempt from or alternatively comply with Section 409A of the Code.

(b) Ten Percent Stockholders. A Ten Percent Stockholder will not be granted an Incentive Stock Option unless the exercise price (per share) of such Option is at least 110% of the Fair Market Value of the Common Stock on the date of grant of such Option and the Option is not exercisable after the expiration of five years from the date of grant.

5. PROVISIONS RELATING TO OPTIONS AND STOCK APPRECIATION RIGHTS.

Each Option or SAR Agreement will be in such form and will contain such terms and conditions as the Board deems appropriate. All Options will be separately designated Incentive Stock Options or Nonstatutory Stock Options at the time of grant, and, if certificates are issued, a separate certificate or certificates will be issued for shares of Common Stock purchased on exercise of each type of Option. If an Option is not specifically designated as an Incentive Stock Option, or if an Option is designated as an Incentive Stock Option but some portion or all of the Option fails to qualify as an Incentive Stock Option under the applicable rules, then the Option (or portion thereof) will be a Nonstatutory Stock Option. The terms and conditions of separate Option or SAR Agreements need not be identical; *provided, however*, that each Award Agreement will conform to (through incorporation of the provisions hereof by reference in the applicable Award Agreement or otherwise) the substance of each of the following provisions:

(a) Term. Subject to the provisions of Section 4(b) regarding Ten Percent Stockholders, no Option or SAR will be exercisable after the expiration of seven years from the date of its grant or such shorter period specified in the Award Agreement.

(b) Exercise or Strike Price. Subject to the provisions of Section 4(b) regarding Ten Percent Stockholders, the exercise or strike price (per share) of each Option or SAR will be not less than 100% of the Fair Market Value of the Common Stock on the date the Award is granted. Notwithstanding the foregoing, an Option or SAR may be granted with an exercise or strike price (per share) less than 100% of the Fair Market

Value of the Common Stock on the date the Award is granted if such Award is granted pursuant to an assumption of, or substitution for, another option or stock appreciation right pursuant to a Transaction and in a manner consistent with the provisions of Section 409A of the Code and, if applicable, Section 424(a) of the Code. Each SAR will be denominated in shares of Common Stock equivalents.

(c) Payment of Exercise Price for Options. The exercise price of an Option may be paid, to the extent permitted by applicable law and as determined by the Board in its sole discretion, by one or more of the methods of payment set forth below that are specified in the Option Agreement. The Board has the authority to grant Options that do not permit all of the following methods of payment (or that otherwise restrict the ability to utilize certain methods) and to grant Options that require the consent of the Company to utilize a particular method of payment.

(i) By cash (including electronic funds transfers), check, bank draft or money order payable to the Company;

(ii) Pursuant to a program developed under Regulation T as promulgated by the Federal Reserve Board that, prior to the issuance of the Common Stock subject to the Option, results in either the receipt of cash (or check) by the Company or the receipt of irrevocable instructions to pay the aggregate exercise price to the Company from the sales proceeds;

(iii) By delivery to the Company (either by actual delivery or attestation) of shares of Common Stock;

(iv) If an Option is a Nonstatutory Stock Option, by a ''net exercise'' arrangement pursuant to which the Company will reduce the number of shares of Common Stock issuable upon exercise by the largest whole number of shares with a Fair Market Value that does not exceed the aggregate exercise price; *provided, however*, that the Company will accept a cash or other payment from the Participant to the extent of any remaining balance of the aggregate exercise price not satisfied by such reduction in the number of whole shares to be issued. Shares of Common Stock will no longer be subject to an Option and will not be exercisable thereafter to the extent that (A) shares issuable upon exercise are used to pay the exercise price pursuant to the ''net exercise,'' (B) shares are delivered to the Participant as a result of such exercise, and (C) shares are withheld to satisfy tax withholding obligations; or

(v) In any other form of legal consideration that may be acceptable to the Board and specified in the applicable Award Agreement.

(d) Exercise and Payment of a SAR. To exercise any outstanding SAR, the Participant must provide written notice of exercise to the Company in compliance with the provisions of the Award Agreement evidencing such SAR. The appreciation distribution payable on the exercise of a SAR will be not greater than an amount equal to the excess of (A) the aggregate Fair Market Value (on the date of the exercise of the SAR) of a number of shares of Common Stock equal to the number of Common Stock equivalents in which the Participant is vested under such SAR, and with respect to which the Participant is exercising the SAR on such date, over (B) the aggregate strike price of the number of Common Stock equivalents with respect to which the Participant is exercising the SAR on such date. The appreciation distribution may be paid in Common Stock, in cash, in any combination of the two or in any other form of consideration, as determined by the Board and contained in the Award Agreement evidencing such SAR.

(e) Transferability of Options and SARs. The Board may, in its sole discretion, impose such limitations on the transferability of Options and SARs as the Board will determine. In the absence of such a determination by the Board to the contrary, the restrictions set forth in this Section 5(e) on the transferability of Options and SARs will apply. Notwithstanding the foregoing or anything in the Plan or an Award Agreement to the contrary, no Option or SAR may be transferred to any financial institution without prior stockholder approval.

(i) Restrictions on Transfer. An Option or SAR will not be transferable, except by will or by the laws of descent and distribution (and pursuant to Sections 5(e)(ii) and 5(e)(iii) below), and will be exercisable during the lifetime of the Participant only by the Participant. Subject to the foregoing paragraph, the Board may, in its sole discretion, permit transfer of the Option or SAR in a manner that is not prohibited by applicable tax and securities laws. Except as explicitly provided in the Plan, neither an Option nor a SAR may be transferred for consideration.

(ii) Domestic Relations Orders. Subject to the approval of the Board or a duly authorized Officer, an Option or SAR may be transferred pursuant to the terms of a domestic relations order, official marital settlement agreement or other divorce or separation instrument as permitted by Treasury Regulations Section 1.421-1(b)(2). If an Option is an Incentive Stock Option, such Option may be deemed to be a Nonstatutory Stock Option as a result of such transfer.

(iii) Beneficiary Designation. Subject to the approval of the Board or a duly authorized Officer, a Participant may, by delivering written notice to the Company, in a form approved by the Company (or the designated broker), designate a third party who, upon the death of the Participant, will thereafter be entitled to exercise the Option or SAR and receive the Common Stock or other consideration resulting from such exercise. In the absence of such a designation, upon the death of the Participant, the executor or administrator of the Participant's estate will be entitled to exercise the Option or SAR and receive the Common Stock or other consideration resulting from such exercise. However, the Company may prohibit designation of a beneficiary at any time, including due to any conclusion by the Company that such designation would be inconsistent with the provisions of applicable laws.

(f) Vesting. The total number of shares of Common Stock subject to an Option or SAR may vest and become exercisable in periodic installments that may or may not be equal. The Option or SAR may be subject to such other terms and conditions on the time or times when it may or may not be exercised (which may be based on the satisfaction of Performance Goals or other criteria) as the Board may deem appropriate. The vesting provisions of individual Options or SARs may vary. The provisions of this Section 5(f) are subject to Section 2(g) and any Option or SAR provisions governing the minimum number of shares of Common Stock as to which an Option or SAR may be exercised.

(g) Termination of Continuous Service. Except as otherwise provided in the applicable Award Agreement or other written agreement between a Participant and the Company or an Affiliate, if a Participant's Continuous Service terminates (other than for Cause and other than upon the Participant's death or Disability), the Participant may exercise his or her Option or SAR (to the extent that the Participant was entitled to exercise such Option or SAR as of the date of termination of Continuous Service), but only within such period of time ending on the earlier of (i) the date that is three months following such termination of Continuous Service (or such longer or shorter period specified in the Award Agreement), and (ii) the expiration of the term of the Option or SAR as set forth in the Award Agreement. If, after such termination of Continuous Service, the Participant does not exercise his or her Option or SAR (as applicable) within the applicable time period, the Option or SAR (as applicable) will terminate.

(h) Extension of Termination Date. Except as otherwise provided in the applicable Award Agreement or other written agreement between a Participant and the Company or an Affiliate, if the exercise of an Option or SAR following the termination of a Participant's Continuous Service (other than for Cause and other than upon the Participant's death or Disability) would be prohibited at any time solely because the issuance of shares of Common Stock would violate the registration requirements under the Securities Act, then the Option or SAR will terminate on the earlier of (i) the expiration of a total period of time (that need not be consecutive) equal to the applicable post-termination exercise period after the termination of the Participant's Continuous Service during which the exercise of the Option or SAR would not be in violation of such registration requirements or (ii) the expiration of the term of the Option or SAR as set forth in the applicable Award Agreement. In addition, except as otherwise provided in the applicable Award Agreement or other written agreement between a Participant and the Company or an Affiliate, if the sale of any Common Stock received upon exercise of an Option or SAR following the termination of a Participant's Continuous Service (other than for Cause) would violate the Company's insider trading policy, then the Option or SAR will terminate on the earlier of (i) the expiration of a total period of time (that need not be consecutive) equal to the applicable post-termination exercise period after the termination of the Participant's Continuous Service during which the sale of the Common Stock received upon exercise of the Option or SAR would not be in violation of the Company's insider trading policy or (ii) the expiration of the term of the Option or SAR as set forth in the applicable Award Agreement.

(i) Disability of Participant. Except as otherwise provided in the applicable Award Agreement or other written agreement between a Participant and the Company or an Affiliate, if a Participant's Continuous Service terminates as a result of the Participant's Disability, the Participant may exercise his or her Option or SAR (to the extent that the Participant was entitled to exercise such Option or SAR as of the date of termination of Continuous Service), but only within such period of time ending on the earlier of (i) the date that is 12 months

following such termination of Continuous Service (or such longer or shorter period specified in the Award Agreement), and (ii) the expiration of the term of the Option or SAR as set forth in the Award Agreement. If, after such termination of Continuous Service, the Participant does not exercise his or her Option or SAR (as applicable) within the applicable time period, the Option or SAR (as applicable) will terminate.

(j) Death of Participant. Except as otherwise provided in the applicable Award Agreement or other written agreement between a Participant and the Company or an Affiliate, if (i) a Participant's Continuous Service terminates as a result of the Participant's death, or (ii) a Participant dies within the period (if any) specified in the Award Agreement for exercisability after the termination of the Participant's Continuous Service (for a reason other than death), then the Participant's Option or SAR may be exercised (to the extent that the Participant was entitled to exercise such Option or SAR as of the date of death) by the Participant's estate, by a person who acquired the right to exercise the Option or SAR by bequest or inheritance, or by a person designated to exercise the Option or SAR upon the Participant's death, but only within such period of time ending on the earlier of (i) the date that is 18 months following the date of death (or such longer or shorter period specified in the Award Agreement), and (ii) the expiration of the term of the Option or SAR as set forth in the Award Agreement. If, after the Participant's death, the Option or SAR (as applicable) is not exercised within the applicable time period, the Option or SAR (as applicable) will terminate.

(k) Termination for Cause. Except as explicitly provided otherwise in the applicable Award Agreement or other individual written agreement between a Participant and the Company or an Affiliate, if a Participant's Continuous Service is terminated for Cause, the Participant's Option or SAR will terminate immediately upon such termination of Continuous Service, and the Participant will be prohibited from exercising his or her Option or SAR from and after the time of such termination of Continuous Service.

(l) Non-Exempt Employees. If an Option or SAR is granted to an Employee who is a non-exempt employee for purposes of the Fair Labor Standards Act of 1938, as amended, the Option or SAR will not be first exercisable for any shares of Common Stock until at least six months following the date of grant of the Option or SAR (although the Award may vest prior to such date). Consistent with the provisions of the Worker Economic Opportunity Act, (i) if such non-exempt employee dies or suffers a Disability, (ii) upon a Transaction in which such Option or SAR is not assumed, continued or substituted, (iii) upon a Change in Control, or (iv) upon the Participant's retirement (as such term may be defined in the Participant's Award Agreement, in another written agreement between the Participant and the Company or an Affiliate, or, if no such definition, in accordance with the Company's or Affiliate's then current employment policies and guidelines), the vested portion of any Options and SARs may be exercised earlier than six months following the date of grant. The foregoing provision is intended to operate so that any income derived by a non-exempt employee in connection with the exercise or vesting of an Option or SAR will be exempt from his or her regular rate of pay. To the extent permitted and/or required for compliance with the Worker Economic Opportunity Act to ensure that any income derived by a non-exempt employee in connection with the exercise, vesting or issuance of any shares under any other Award will be exempt from the employee's regular rate of pay, the provisions of this Section 5(l) will apply to all Awards and are hereby incorporated by reference into such Award Agreements.

6. PROVISIONS OF AWARDS OTHER THAN OPTIONS AND SARS.

(a) Restricted Stock Awards. Each Restricted Stock Award Agreement will be in such form and will contain such terms and conditions as the Board deems appropriate. To the extent consistent with the Company's bylaws, at the Board's election, shares of Common Stock underlying a Restricted Stock Award may be (i) held in book entry form subject to the Company's instructions until any restrictions relating to the Restricted Stock Award lapse, or (ii) evidenced by a certificate, which certificate will be held in such form and manner as determined by the Board. The terms and conditions of separate Restricted Stock Award Agreements need not be identical; *provided, however*, that each Restricted Stock Award Agreement will conform to (through incorporation of the provisions hereof by reference in the applicable Award Agreement or otherwise) the substance of each of the following provisions:

(i) Consideration. A Restricted Stock Award may be awarded in consideration for (A) cash (including electronic funds transfers), check, bank draft or money order payable to the Company, (B) past services to the Company or an Affiliate or (C) any other form of legal consideration (including future services) that may be acceptable to the Board, in its sole discretion, and permissible under applicable law.

(ii) Vesting. Subject to Section 2(g), shares of Common Stock awarded under a Restricted Stock Award Agreement may be subject to forfeiture to or repurchase by the Company in accordance with a vesting schedule to be determined by the Board.

(iii) Termination of Continuous Service. If a Participant's Continuous Service terminates, the Company may receive through a forfeiture condition or a repurchase right any or all of the shares of Common Stock held by the Participant that have not vested as of the date of such termination under the terms of the Participant's Restricted Stock Award Agreement.

(iv) Transferability. Rights to acquire shares of Common Stock under a Restricted Stock Award Agreement will be transferable by the Participant only upon such terms and conditions as are set forth in the Restricted Stock Award Agreement, as the Board will determine in its sole discretion, so long as Common Stock awarded under the Restricted Stock Award Agreement remains subject to the terms of the Restricted Stock Award Agreement. Notwithstanding the foregoing or anything in the Plan or a Restricted Stock Award Agreement to the contrary, no Restricted Stock Award may be transferred to any financial institution without prior stockholder approval.

(b) Restricted Stock Unit Awards. Each Restricted Stock Unit Award Agreement will be in such form and will contain such terms and conditions as the Board deems appropriate. The terms and conditions of separate Restricted Stock Unit Award Agreements need not be identical; *provided, however*, that each Restricted Stock Unit Award Agreement will conform to (through incorporation of the provisions hereof by reference in the applicable Award Agreement or otherwise) the substance of each of the following provisions:

(i) Consideration. At the time of grant of a Restricted Stock Unit Award, the Board will determine the consideration, if any, to be paid by the Participant upon delivery of each share of Common Stock subject to the Restricted Stock Unit Award. The consideration to be paid (if any) by the Participant for each share of Common Stock subject to a Restricted Stock Unit Award may be paid in any form of legal consideration that may be acceptable to the Board, in its sole discretion, and permissible under applicable law.

(ii) Vesting. Subject to Section 2(g), at the time of the grant of a Restricted Stock Unit Award, the Board may impose such restrictions on or conditions to the vesting of the Restricted Stock Unit Award as it, in its sole discretion, deems appropriate.

(iii) Payment. A Restricted Stock Unit Award may be settled by the delivery of shares of Common Stock, their cash equivalent, any combination thereof or in any other form of consideration, as determined by the Board and contained in the Restricted Stock Unit Award Agreement.

(iv) Additional Restrictions. At the time of the grant of a Restricted Stock Unit Award, the Board, as it deems appropriate, may impose such restrictions or conditions that delay the delivery of the shares of Common Stock (or their cash equivalent) subject to the Restricted Stock Unit Award to a time after the vesting of the Restricted Stock Unit Award.

(v) Termination of Continuous Service. Except as otherwise provided in the applicable Restricted Stock Unit Award Agreement or other written agreement between a Participant and the Company or an Affiliate, if a Participant's Continuous Service terminates, any portion of the Participant's Restricted Stock Unit Award that has not vested as of the date of such termination will be forfeited upon such termination.

(c) Performance Stock Awards.

(i) General. A Performance Stock Award is an Award that is payable (including that may be granted, vest or be exercised) contingent upon the attainment during a Performance Period of specified Performance Goals. A Performance Stock Award may, but need not, require the Participant's completion of a specified period of Continuous Service. Subject to Section 2(g), the length of any Performance Period, the Performance Goals to be achieved during the Performance Period, and the measure of whether and to what degree such Performance Goals have been attained will be conclusively determined by the Board, in its sole discretion. In addition, to the extent permitted by applicable law and the applicable Award Agreement, the Board may determine that cash may be used in payment of Performance Stock Awards.

(ii) Board Discretion. With respect to any Performance Stock Award, the Board retains the discretion to (A) reduce or eliminate the compensation or economic benefit due upon the attainment of any Performance Goals on the basis of any considerations as the Board, in its sole discretion, may determine and (B) define the manner of calculating the Performance Criteria it selects to use for a Performance Period.

(d) Other Stock Awards. Other forms of Awards valued in whole or in part by reference to, or otherwise based on, Common Stock, including the appreciation in value thereof (*e.g.*, options or stock appreciation rights with an exercise or strike price (per share) less than 100% of the Fair Market Value of the Common Stock on the date of grant) may be granted either alone or in addition to Awards granted under Section 5 and this Section 6. Subject to the provisions of the Plan (including, but not limited to, Sections 2(g) and 2(h)), the Board will have sole and complete authority to determine the persons to whom and the time or times at which such Other Stock Awards will be granted, the number of shares of Common Stock (or the cash equivalent thereof) to be granted pursuant to such Other Stock Awards and all other terms and conditions of such Other Stock Awards.

7. COVENANTS OF THE COMPANY.

(a) Availability of Shares. The Company will keep available at all times the number of shares of Common Stock reasonably required to satisfy then-outstanding Awards.

(b) Securities Law Compliance. The Company will seek to obtain from each regulatory commission or agency having jurisdiction over the Plan the authority required to grant Awards and to issue and sell shares of Common Stock upon exercise of the Awards; *provided, however*, that this undertaking will not require the Company to register under the Securities Act the Plan, any Award or any Common Stock issued or issuable pursuant to any such Award. If, after reasonable efforts and at a reasonable cost, the Company is unable to obtain from any such regulatory commission or agency the authority that counsel for the Company deems necessary for the lawful issuance and sale of Common Stock under the Plan, the Company will be relieved from any liability for failure to issue and sell Common Stock upon exercise of such Awards unless and until such authority is obtained. A Participant will not be eligible for the grant of an Award or the subsequent issuance of cash or Common Stock pursuant to the Award if such grant or issuance would be in violation of any applicable securities law.

(c) No Obligation to Notify or Minimize Taxes. The Company will have no duty or obligation to any Participant to advise such holder as to the time or manner of exercising an Award. Furthermore, the Company will have no duty or obligation to warn or otherwise advise such holder of a pending termination or expiration of an Award or a possible period in which the Award may not be exercised. The Company has no duty or obligation to minimize the tax consequences of an Award to the holder of such Award.

8. MISCELLANEOUS.

(a) Use of Proceeds from Sales of Common Stock. Proceeds from the sale of shares of Common Stock issued pursuant to Awards will constitute general funds of the Company.

(b) Corporate Action Constituting Grant of Awards. Corporate action constituting a grant by the Company of an Award to any Participant will be deemed completed as of the date of such corporate action, unless otherwise determined by the Board, regardless of when the instrument, certificate or letter evidencing the Award is communicated to, or actually received or accepted by, the Participant. In the event that the corporate records (*e.g.*, Board consents, resolutions or minutes) documenting the corporate action constituting the grant contain terms (*e.g.*, exercise price, vesting schedule or number of shares) that are inconsistent with those in the Award Agreement or related grant documents as a result of a clerical error in the papering of the Award Agreement or related grant documents, the corporate records will control and the Participant will have no legally binding right to the incorrect term in the Award Agreement or related grant documents.

(c) Stockholder Rights. No Participant will be deemed to be the holder of, or to have any of the rights of a holder with respect to, any shares of Common Stock subject to an Award unless and until (i) such Participant has satisfied all requirements for exercise of, or the issuance of shares of Common Stock under, the Award pursuant to its terms, and (ii) the issuance of the Common Stock subject to such Award has been entered into the books and records of the Company.

(d) No Employment or Other Service Rights. Nothing in the Plan, any Award Agreement or any other instrument executed thereunder or in connection with any Award granted pursuant thereto will confer upon any

Participant any right to continue to serve the Company or an Affiliate in the capacity in effect at the time the Award was granted or will affect the right of the Company or an Affiliate to terminate (i) the employment of an Employee with or without notice and with or without cause, or (ii) the service of a Director pursuant to the bylaws of the Company or an Affiliate, and any applicable provisions of the corporate law of the state in which the Company or the Affiliate is incorporated, as the case may be.

(e) Change in Time Commitment. In the event a Participant's regular level of time commitment in the performance of his or her services for the Company or any Affiliate is reduced (for example, and without limitation, if the Participant is an Employee of the Company and the Employee has a change in status from a full-time Employee to a part-time Employee or takes an extended leave of absence) after the date of grant of any Award to the Participant, the Board has the right in its sole discretion to (i) make a corresponding reduction in the number of shares or cash amount subject to any portion of such Award that is scheduled to vest or become payable after the date of such change in time commitment, and (ii) in lieu of or in combination with such a reduction, extend the vesting or payment schedule applicable to such Award. In the event of any such reduction, the Participant will have no right with respect to any portion of the Award that is so reduced or extended.

(f) Incentive Stock Option Limitation. To the extent that the aggregate Fair Market Value (determined at the time of grant) of Common Stock with respect to which Incentive Stock Options are exercisable for the first time by any Participant during any calendar year (under all plans of the Company and any Affiliates) exceeds $100,000 (or such other limit established in the Code) or otherwise does not comply with the rules governing Incentive Stock Options, the Options or portions thereof that exceed such limit (according to the order in which they were granted) or otherwise do not comply with such rules will be treated as Nonstatutory Stock Options, notwithstanding any contrary provision of the applicable Option Agreement(s).

(g) Investment Assurances. The Company may require a Participant, as a condition of exercising or acquiring Common Stock under any Award, (i) to give written assurances satisfactory to the Company as to the Participant's knowledge and experience in financial and business matters and/or to employ a purchaser representative reasonably satisfactory to the Company who is knowledgeable and experienced in financial and business matters and that he or she is capable of evaluating, alone or together with the purchaser representative, the merits and risks of exercising the Award and (ii) to give written assurances satisfactory to the Company stating that the Participant is acquiring Common Stock subject to the Award for the Participant's own account and not with any present intention of selling or otherwise distributing the Common Stock. The foregoing requirements, and any assurances given pursuant to such requirements, will be inoperative if (A) the issuance of the shares upon the exercise or acquisition of Common Stock under the Award has been registered under a then currently effective registration statement under the Securities Act or (B) as to any particular requirement, a determination is made by counsel for the Company that such requirement need not be met in the circumstances under the then applicable securities laws. The Company may, upon advice of counsel to the Company, place legends on stock certificates issued under the Plan as such counsel deems necessary or appropriate in order to comply with applicable securities laws, including, but not limited to, legends restricting the transfer of the Common Stock.

(h) Withholding Obligations. Unless prohibited by the terms of an Award Agreement, the Company may, in its sole discretion, satisfy any federal, state, local or foreign tax withholding obligation relating to an Award by any of the following means or by a combination of such means: (i) causing the Participant to tender a cash payment; (ii) withholding shares of Common Stock from the shares of Common Stock issued or otherwise issuable to the Participant in connection with the Award; (iii) withholding cash from an Award settled in cash; (iv) withholding payment from any amounts otherwise payable to the Participant; or (v) by such other method as may be set forth in the Award Agreement.

(i) Electronic Delivery. Any reference herein to a ''written'' agreement or document will include any agreement or document delivered electronically, filed publicly at www.sec.gov (or any successor website thereto) or posted on the Company's intranet (or other shared electronic medium controlled by the Company to which the Participant has access).

(j) Deferrals. To the extent permitted by applicable law, the Board, in its sole discretion, may determine that the delivery of Common Stock or the payment of cash, upon the exercise, vesting or settlement of all or a portion of any Award may be deferred and may establish programs and procedures for deferral elections to be made by Participants. Deferrals by Participants will be made in accordance with Section 409A of the Code.

Consistent with Section 409A of the Code, the Board may provide for distributions while a Participant is still an employee or otherwise providing services to the Company or an Affiliate. The Board is authorized to make deferrals of Awards and determine when, and in what annual percentages, Participants may receive payments, including lump sum payments, following the Participant's termination of Continuous Service, and implement such other terms and conditions consistent with the provisions of the Plan and in accordance with applicable law.

(k) Section 409A. Unless otherwise expressly provided for in an Award Agreement, the Plan and Award Agreements will be interpreted to the greatest extent possible in a manner that makes the Plan and the Awards granted hereunder exempt from Section 409A of the Code, and, to the extent not so exempt, in compliance with Section 409A of the Code. If the Board determines that any Award granted hereunder is not exempt from and is therefore subject to Section 409A of the Code, the Award Agreement evidencing such Award will incorporate the terms and conditions necessary to avoid the consequences specified in Section 409A(a)(1) of the Code, and to the extent an Award Agreement is silent on terms necessary for compliance with Section 409A of the Code, such terms are hereby incorporated by reference into the Award Agreement. Notwithstanding anything to the contrary in this Plan (and unless the Award Agreement specifically provides otherwise), if the shares of Common Stock are publicly traded, and if a Participant holding an Award that constitutes ''deferred compensation'' under Section 409A of the Code is a ''specified employee'' for purposes of Section 409A of the Code, no distribution or payment of any amount under such Award that is due because of a ''separation from service'' (as defined in Section 409A of the Code without regard to alternative definitions thereunder) will be issued or paid before the date that is six months and one day following the date of such Participant's ''separation from service'' or, if earlier, the date of the Participant's death, unless such distribution or payment may be made in a manner that complies with Section 409A of the Code, and any amounts so deferred will be paid in a lump sum on the day after such six-month period elapses, with the balance paid thereafter on the original schedule.

(l) Clawback/Recovery. All Awards granted under the Plan will be subject to recoupment in accordance with any clawback policy that the Company is required to adopt pursuant to the listing standards of any national securities exchange or association on which the Company's securities are listed or as is otherwise required by the Dodd-Frank Wall Street Reform and Consumer Protection Act or other applicable law. In addition, the Board may impose such other clawback, recovery or recoupment provisions in an Award Agreement as the Board determines necessary or appropriate, including, but not limited to, a reacquisition right in respect of previously acquired shares of Common Stock or other cash or property upon the occurrence of Cause. No recovery of compensation under such a clawback policy will be an event giving rise to a right to resign for ''good reason'' or ''constructive termination'' (or similar term) under any agreement with the Company or an Affiliate.

9. ADJUSTMENTS UPON CHANGES IN COMMON STOCK; OTHER CORPORATE EVENTS.

(a) Capitalization Adjustments. In the event of a Capitalization Adjustment, the Board will appropriately and proportionately adjust: (i) the class(es) and maximum number of securities subject to the Plan pursuant to Section 3(a); (ii) the class(es) and maximum number of securities that may be issued pursuant to the exercise of Incentive Stock Options pursuant to Section 3(c); and (iii) the class(es) and number of securities and price per share of stock subject to outstanding Awards. The Board will make such adjustments and its determination will be final, binding and conclusive.

(b) Dissolution or Liquidation. Except as otherwise provided in the applicable Award Agreement or other written agreement between a Participant and the Company or an Affiliate, in the event of a dissolution or liquidation of the Company, all outstanding Awards (other than Awards consisting of vested and outstanding shares of Common Stock not subject to a forfeiture condition or the Company's right of repurchase) will terminate immediately prior to the completion of such dissolution or liquidation, and the shares of Common Stock subject to a forfeiture condition or the Company's right of repurchase may be reacquired or repurchased by the Company notwithstanding the fact that the holder of such Award is providing Continuous Service.

(c) Transactions. In the event of a Transaction, the provisions of this Section 9(c) will apply to each outstanding Award and Prior Plan Award, in each case unless otherwise provided in the instrument evidencing the Award or Prior Plan Award (as applicable), in any other written agreement between the Company or any Affiliate and the Participant, or in any director compensation policy of the Company.

(i) Awards May Be Assumed. In the event of a Transaction, any surviving corporation or acquiring corporation (or the surviving or acquiring corporation's parent company) may assume or continue any or all outstanding Awards and/or Prior Plan Awards or may substitute similar stock awards for any or all

outstanding Awards and/or Prior Plan Awards (including, but not limited to, awards to acquire the same consideration paid to the stockholders of the Company pursuant to the Transaction), and any reacquisition or repurchase rights held by the Company in respect of Common Stock issued pursuant to any outstanding Awards and/or Prior Plan Awards may be assigned by the Company to the surviving corporation or acquiring corporation (or the surviving or acquiring corporation's parent company). For clarity, in the event of a Transaction, any surviving corporation or acquiring corporation (or the surviving or acquiring corporation's parent company) may choose to assume or continue only a portion of an outstanding Award or Prior Plan Award, to substitute a similar stock award for only a portion of an outstanding Award or Prior Plan Award, or to assume or continue, or substitute similar stock awards for, the outstanding Awards and/or Prior Plan Awards held by some, but not all, Participants. The terms of any such assumption, continuation or substitution will be set by the Board.

(ii) Awards Held by Current Participants. In the event of a Transaction in which the surviving corporation or acquiring corporation (or the surviving or acquiring corporation's parent company) does not assume or continue outstanding Awards and/or Prior Plan Awards, or substitute similar stock awards for outstanding Awards and/or Prior Plan Awards, then with respect to any such Awards and/or Prior Plan Awards that have not been assumed, continued or substituted and that are held by Participants whose Continuous Service has not terminated prior to the effective time of the Transaction (referred to as the ''Current Participants''), the vesting (and exercisability, if applicable) of such Awards and Prior Plan Awards will be accelerated in full (and with respect to Performance Stock Awards, vesting will be deemed to be satisfied at the target level of performance) to a date prior to the effective time of the Transaction (contingent upon the closing or completion of the Transaction) as the Board will determine (or, if the Board does not determine such a date, to the date that is five days prior to the effective time of the Transaction), and such Awards and Prior Plan Awards will terminate if not exercised (if applicable) prior to the effective time of the Transaction in accordance with the exercise procedures determined by the Board, and any reacquisition or repurchase rights held by the Company with respect to such Awards and Prior Plan Awards will lapse (contingent upon the closing or completion of the Transaction).

(iii) Awards Held by Participants other than Current Participants. In the event of a Transaction in which the surviving corporation or acquiring corporation (or the surviving or acquiring corporation's parent company) does not assume or continue outstanding Awards and/or Prior Plan Awards, or substitute similar stock awards for outstanding Awards and/or Prior Plan Awards, then with respect to any such Awards and/or Prior Plan Awards that have not been assumed, continued or substituted and that are held by Participants other than Current Participants, such Awards and Prior Plan Awards will terminate if not exercised (if applicable) prior to the effective time of the Transaction in accordance with the exercise procedures determined by the Board; *provided*, *however*, that any reacquisition or repurchase rights held by the Company with respect to such Awards and Prior Plan Awards will not terminate and may continue to be exercised notwithstanding the Transaction.

(iv) Payment for Awards in Lieu of Exercise. Notwithstanding the foregoing, in the event any outstanding Award or Prior Plan Award held by a Participant will terminate if not exercised prior to the effective time of a Transaction, the Board may provide that the Participant may not exercise such Award or Prior Plan Award but instead will receive a payment, in such form as may be determined by the Board, equal in value to the excess, if any, of (A) the value of the property the Participant would have received upon the exercise of such Award or Prior Plan Award immediately prior to the effective time of the Transaction, over (B) any exercise price payable by the Participant in connection with such exercise. For clarity, such payment may be zero if the value of such property is equal to or less than the exercise price. Payments under this provision may be delayed to the same extent that payment of consideration to the holders of the Common Stock in connection with the Transaction is delayed as a result of escrows, earn outs, holdbacks or any other contingencies.

(d) Change in Control. Unless provided otherwise in the Award Agreement for an Award or award agreement for a Prior Plan Award (as applicable), in any other written agreement or plan between the Company or any Affiliate and the Participant, or in any director compensation policy of the Company, an Award or Prior Plan Award will not be subject to additional acceleration of vesting and exercisability upon or after a Change in Control.

(e) Prior Plan Awards. For clarity, with respect to any Prior Plan Award, the terms set forth in Sections 9(c) and 9(d) will supersede any terms set forth in the applicable Prior Plan regarding the treatment of such Prior Plan Award in the event of a Corporate Transaction (as defined in the applicable Prior Plan) or Change in Control (as defined in the applicable Prior Plan).

(f) Parachute Payments. Except as otherwise provided in the applicable Award Agreement or other written agreement between a Participant and the Company or an Affiliate, if any payment or benefit the Participant would receive pursuant to a Change in Control from the Company or otherwise (''***Payment***'') would (i) constitute a ''parachute payment'' within the meaning of Section 280G of the Code, and (ii) but for this sentence, be subject to the excise tax imposed by Section 4999 of the Code (the ''***Excise Tax***''), then such Payment will be equal to the Reduced Amount. The ''***Reduced Amount***'' will be either (x) the largest portion of the Payment that would result in no portion of the Payment being subject to the Excise Tax or (y) the largest portion, up to and including the total, of the Payment, whichever amount, after taking into account all applicable federal, state and local employment taxes, income taxes, and the Excise Tax (all computed at the highest applicable marginal rate), results in the Participant's receipt, on an after-tax basis, of the greater amount of the Payment notwithstanding that all or some portion of the Payment may be subject to the Excise Tax. If a reduction in payments or benefits constituting ''parachute payments'' is necessary so that the Payment equals the Reduced Amount, reduction will occur in the following order: (A) reduction of cash payments; (B) cancellation of accelerated vesting of equity awards other than stock options; (C) cancellation of accelerated vesting of stock options; and (D) reduction of other benefits paid to the Participant. Within any such category of payments and benefits (that is, (A), (B), (C) or (D)), a reduction will occur first with respect to amounts that are not ''deferred compensation'' within the meaning of Section 409A of the Code and then with respect to amounts that are. In the event that acceleration of compensation from a Participant's equity awards is to be reduced, such acceleration of vesting will be canceled, subject to the immediately preceding sentence, in the reverse order of the date of grant. The accounting firm engaged by the Company for general audit purposes as of the day prior to the effective date of the Change in Control will perform the foregoing calculations. If the accounting firm so engaged by the Company is serving as accountant or auditor for the individual, entity or group effecting the Change in Control, the Company will appoint a nationally recognized accounting firm to make the determinations required hereunder. The Company will bear all expenses with respect to the determinations by such accounting firm required to be made hereunder. The accounting firm engaged to make the determinations hereunder will provide its calculations, together with detailed supporting documentation, to the Participant and the Company within 15 calendar days after the date on which the Participant's right to a Payment is triggered (if requested at that time by the Participant or the Company) or such other time as reasonably requested by the Participant or the Company. Any good faith determinations of the accounting firm made hereunder will be final, binding and conclusive upon the Participant and the Company.

10. TERMINATION OR SUSPENSION OF THE PLAN.

(a) Termination or Suspension. The Board may suspend or terminate the Plan at any time. No Incentive Stock Option may be granted after the tenth anniversary of the earlier of (i) the Adoption Date or (ii) the date the Plan is approved by the stockholders of the Company. No Awards may be granted under the Plan while the Plan is suspended or after it is terminated.

(b) No Impairment of Rights. Suspension or termination of the Plan will not materially impair rights and obligations under any Award granted while the Plan is in effect except with the written consent of the affected Participant or as otherwise permitted in the Plan (including Section 2(b)(viii)) or an Award Agreement.

11. EFFECTIVE DATE OF PLAN.

This Plan will become effective on the Effective Date.

12. CHOICE OF LAW.

The laws of the State of Delaware will govern all questions concerning the construction, validity and interpretation of this Plan, without regard to that state's conflict of laws rules.

13. DEFINITIONS. As used in the Plan, the following definitions will apply to the capitalized terms indicated below:

(a) ''***Adoption Date***'' means April 8, 2018, which is the date the Plan was adopted by the Board.

(b) "***Affiliate***" means, at the time of determination, any "parent" or "subsidiary" of the Company as such terms are defined in Rule 405. The Board will have the authority to determine the time or times at which "parent" or "subsidiary" status is determined within the foregoing definition.

(c) "***Appreciation Award***" means (i) a stock option or stock appreciation right granted under any of the Prior Plans or (ii) an Option or Stock Appreciation Right, in each case with respect to which the exercise or strike price is at least 100% of the Fair Market Value of the Common Stock subject to the stock option or stock appreciation right, or Option or Stock Appreciation Right, as applicable, on the date of grant.

(d) "***Award***" means an Incentive Stock Option, a Nonstatutory Stock Option, a Stock Appreciation Right, a Restricted Stock Award, a Restricted Stock Unit Award, a Performance Stock Award or any Other Stock Award.

(e) "***Award Agreement***" means a written agreement between the Company and a Participant evidencing the terms and conditions of an Award.

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

(g) "***Capitalization Adjustment***" means any change that is made in, or other events that occur with respect to, the Common Stock subject to the Plan or subject to any Award after the Adoption Date without the receipt of consideration by the Company through merger, consolidation, reorganization, recapitalization, reincorporation, stock dividend, dividend in property other than cash, large nonrecurring cash dividend, stock split, reverse stock split, liquidating dividend, combination of shares, exchange of shares, change in corporate structure or any similar equity restructuring transaction, as that term is used in Statement of Financial Accounting Standards No. 123 (revised). Notwithstanding the foregoing, the conversion of any convertible securities of the Company will not be treated as a Capitalization Adjustment.

(h) "***Cause***" will have the meaning ascribed to such term in any written agreement between a Participant and the Company or an Affiliate defining such term and, in the absence of such agreement, such term means, with respect to a Participant, the occurrence of one or more of the following: (i) the Participant's theft, dishonesty, willful misconduct, breach of fiduciary duty for personal profit, or falsification of any Company or Affiliate documents or records; (ii) the Participant's material failure to abide by the code of conduct or other policies (including, without limitation, policies relating to confidentiality and reasonable workplace conduct) of the Company or an Affiliate; (iii) the Participant's unauthorized use, misappropriation, destruction or diversion of any tangible or intangible asset or corporate opportunity of the Company or an Affiliate (including, without limitation, the Participant's improper use or disclosure of confidential or proprietary information of the Company or an Affiliate); (iv) any intentional act by the Participant which has a material detrimental effect on the reputation or business of the Company or an Affiliate; (v) the Participant's repeated failure or inability to perform any reasonable assigned duties after written notice from the Company or an Affiliate, and a reasonable opportunity to cure, such failure or inability; (vi) any material breach by the Participant of any employment or service agreement between the Participant and the Company or an Affiliate, which breach is not cured pursuant to the terms of such agreement; or (vii) the Participant's conviction (including any plea of guilty or nolo contendere) of any criminal act involving fraud, dishonesty, misappropriation or moral turpitude, or which impairs the Participant's ability to perform his or her duties. The determination that a termination of a Participant's Continuous Service is either for Cause or without Cause will be made by the Company, in its sole discretion. Any determination by the Company that the Continuous Service of a Participant was terminated with or without Cause for the purposes of outstanding Awards held by the Participant will have no effect upon any determination of the rights or obligations of the Company or the Participant for any other purpose.

(i) "***Change in Control***" means the occurrence, in a single transaction or in a series of related transactions, of any one or more of the following events:

(i) any Exchange Act Person becomes the Owner, directly or indirectly, of securities of the Company representing more than 50% of the combined voting power of the Company's then outstanding securities other than by virtue of a merger, consolidation or similar transaction. Notwithstanding the foregoing, a Change in Control will not be deemed to occur (A) on account of the acquisition of securities of the Company directly from the Company, (B) on account of the acquisition of securities of the Company by an investor, any affiliate thereof or any other Exchange Act Person that acquires the Company's securities in a transaction or series of related transactions the primary purpose of which is to obtain financing for the Company through the issuance of equity securities, or (C) solely because the level of Ownership held by

any Exchange Act Person (the "***Subject Person***") exceeds the designated percentage threshold of the outstanding voting securities as a result of a repurchase or other acquisition of voting securities by the Company reducing the number of shares outstanding, provided that if a Change in Control would occur (but for the operation of this sentence) as a result of the acquisition of voting securities by the Company, and after such share acquisition, the Subject Person becomes the Owner of any additional voting securities that, assuming the repurchase or other acquisition had not occurred, increases the percentage of the then outstanding voting securities Owned by the Subject Person over the designated percentage threshold, then a Change in Control will be deemed to occur;

(ii) there is consummated a merger, consolidation or similar transaction involving (directly or indirectly) the Company and, immediately after the consummation of such merger, consolidation or similar transaction, the stockholders of the Company immediately prior thereto do not Own, directly or indirectly, either (A) outstanding voting securities representing more than 50% of the combined outstanding voting power of the surviving Entity in such merger, consolidation or similar transaction or (B) more than 50% of the combined outstanding voting power of the parent of the surviving Entity in such merger, consolidation or similar transaction, in each case in substantially the same proportions as their Ownership of the outstanding voting securities of the Company immediately prior to such transaction;

(iii) there is consummated a sale, lease, exclusive license or other disposition of all or substantially all of the consolidated assets of the Company and its Subsidiaries, other than a sale, lease, license or other disposition of all or substantially all of the consolidated assets of the Company and its Subsidiaries to an Entity, more than 50% of the combined voting power of the voting securities of which are Owned by stockholders of the Company in substantially the same proportions as their Ownership of the outstanding voting securities of the Company immediately prior to such sale, lease, license or other disposition; or

(iv) over a period of 12 months or less, individuals who, on the Adoption Date, are members of the Board (the "Incumbent Board") cease for any reason to constitute at least a majority of the members of the Board; *provided, however*, that if the appointment or election (or nomination for election) of any new Board member was approved or recommended by a majority vote of the members of the Incumbent Board then still in office, such new member will, for purposes of this Plan, be considered as a member of the Incumbent Board.

Notwithstanding the foregoing or any other provision of this Plan, (A) the term Change in Control will not include a sale of assets, merger or other transaction effected exclusively for the purpose of changing the domicile of the Company, and (B) the definition of Change in Control (or any analogous term) in an individual written agreement between a Participant and the Company or an Affiliate will supersede the foregoing definition with respect to Awards and/or Prior Plan Awards (as applicable) subject to such agreement; *provided, however*, that (1) if no definition of Change in Control (or any analogous term) is set forth in such an individual written agreement, the foregoing definition will apply; and (2) no Change in Control (or any analogous term) will be deemed to occur with respect to Awards and/or Prior Plan Awards (as applicable) subject to such an individual written agreement without a requirement that the Change in Control (or any analogous term) actually occur.

If required for compliance with Section 409A of the Code, in no event will an event be deemed a Change in Control if such event is not also a "change in the ownership of" the Company, a "change in the effective control of" the Company or a "change in the ownership of a substantial portion of the assets of" the Company, each as determined under Treasury Regulations Section 1.409A-3(i)(5) (without regard to any alternative definition thereunder). The Board may, in its sole discretion and without a Participant's consent, amend the definition of "Change in Control" to conform to the definition of a "change in control event" under Section 409A of the Code and the regulations thereunder.

(j) "***Code***" means the Internal Revenue Code of 1986, as amended, including any applicable regulations and guidance thereunder.

(k) "***Committee***" means a committee of one or more Directors to whom authority has been delegated by the Board in accordance with Section 2(c).

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

(m) "***Company***" means Dynavax Technologies Corporation, a Delaware corporation.

(n) "***Continuous Service***" means that the Participant's service with the Company or an Affiliate, whether as an Employee or Director, is not interrupted or terminated. A change in the capacity in which the Participant renders service to the Company or an Affiliate as an Employee or Director or a change in the Entity for which the Participant renders such service, provided that there is no interruption or termination of the Participant's service with the Company or an Affiliate, will not terminate a Participant's Continuous Service; *provided, however,* that if the Entity for which a Participant is rendering services ceases to qualify as an Affiliate, as determined by the Board, in its sole discretion, such Participant's Continuous Service will be considered to have terminated on the date such Entity ceases to qualify as an Affiliate. For example, a change in status from an Employee of the Company to a Director will not constitute an interruption of Continuous Service. To the extent permitted by law, the Board or the chief executive officer of the Company, in that party's sole discretion, may determine whether Continuous Service will be considered interrupted in the case of (i) any leave of absence approved by the Board or chief executive officer, including sick leave, military leave or any other personal leave, or (ii) transfers between the Company, an Affiliate or their successors. Notwithstanding the foregoing, a leave of absence will be treated as Continuous Service for purposes of vesting in an Award only to such extent as may be provided in the Company's or Affiliate's leave of absence policy, in the written terms of any leave of absence agreement or policy applicable to the Participant, or as otherwise required by law.

(o) "***Corporate Transaction***" means the occurrence, in a single transaction or in a series of related transactions, of any one or more of the following events:

(i) the consummation of a sale or other disposition of all or substantially all, as determined by the Board, in its sole discretion, of the consolidated assets of the Company and its Subsidiaries;

(ii) the consummation of a sale or other disposition of at least 90% of the outstanding securities of the Company;

(iii) the consummation of a merger, consolidation or similar transaction following which the Company is not the surviving corporation; or

(iv) the consummation of a merger, consolidation or similar transaction following which the Company is the surviving corporation but the shares of Common Stock outstanding immediately preceding the merger, consolidation or similar transaction are converted or exchanged by virtue of the merger, consolidation or similar transaction into other property, whether in the form of securities, cash or otherwise.

If required for compliance with Section 409A of the Code, in no event will an event be deemed a Corporate Transaction if such event is not also a "change in the ownership of" the Company, a "change in the effective control of" the Company or a "change in the ownership of a substantial portion of the assets of" the Company, each as determined under Treasury Regulations Section 1.409A-3(i)(5) (without regard to any alternative definition thereunder). The Board may, in its sole discretion and without a Participant's consent, amend the definition of "Corporate Transaction" to conform to the definition of a "change in control event" under Section 409A of the Code and the regulations thereunder.

(p) "***Director***" means a member of the Board.

(q) "***Disability***" means, with respect to a Participant, the inability of such Participant to engage in any substantial gainful activity by reason of any medically determinable physical or mental impairment that can be expected to result in death or that has lasted or can be expected to last for a continuous period of not less than 12 months, as provided in Sections 22(e)(3) and 409A(a)(2)(c)(i) of the Code, and will be determined by the Board on the basis of such medical evidence as the Board deems warranted under the circumstances.

(r) "***Effective Date***" means the effective date of this Plan, which is the date of the Annual Meeting of Stockholders of the Company held in 2018, provided that this Plan is approved by the Company's stockholders at such meeting.

(s) "***Employee***" means any person employed by the Company or an Affiliate. However, service solely as a Director, or payment of a fee for such services, will not cause a Director to be considered an "Employee" for purposes of the Plan.

(t) "***Entity***" means a corporation, partnership, limited liability company or other entity.

(u) "***Exchange Act***" means the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.

(v) "***Exchange Act Person***" means any natural person, Entity or "group" (within the meaning of Section 13(d) or 14(d) of the Exchange Act), except that "Exchange Act Person" will not include (i) the Company or any Subsidiary of the Company, (ii) any employee benefit plan of the Company or any Subsidiary of the Company or any trustee or other fiduciary holding securities under an employee benefit plan of the Company or any Subsidiary of the Company, (iii) an underwriter temporarily holding securities pursuant to a registered public offering of such securities, (iv) an Entity Owned, directly or indirectly, by the stockholders of the Company in substantially the same proportions as their Ownership of stock of the Company, or (v) any natural person, Entity or "group" (within the meaning of Section 13(d) or 14(d) of the Exchange Act) that, as of the Effective Date, is the Owner, directly or indirectly, of securities of the Company representing more than fifty percent 50% of the combined voting power of the Company's then outstanding securities.

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

(i) Unless otherwise provided by the Board, if the Common Stock is listed on any established stock exchange or traded on any established market, then the Fair Market Value of a share of Common Stock will be the closing sales price for such stock as quoted on such exchange or market (or the exchange or market with the greatest volume of trading in the Common Stock) on the date of determination, as reported in a source the Board deems reliable.

(ii) Unless otherwise provided by the Board, if there is no closing sales price for the Common Stock on the date of determination, then the Fair Market Value of a share of Common Stock will be the closing sales price for such stock on the last preceding date for which such quotation exists.

(iii) In the absence of such markets for the Common Stock, the Fair Market Value of a share of Common Stock will be determined by the Board in good faith and in a manner that complies with Sections 409A and 422 of the Code.

(x) "***Full Value Award***" means (i) a stock award granted under any of the Prior Plans or (ii) an Award, in each case that is not an Appreciation Award.

(y) "***Incentive Stock Option***" means an option granted pursuant to Section 5 that is intended to be, and that qualifies as, an "incentive stock option" within the meaning of Section 422 of the Code.

(z) "***Non-Employee Director***" means a Director who either (i) is not a current employee or officer of the Company or an Affiliate, does not receive compensation, either directly or indirectly, from the Company or an Affiliate for services rendered as a consultant or in any capacity other than as a Director (except for an amount as to which disclosure would not be required under Item 404(a) of Regulation S-K promulgated pursuant to the Securities Act ("Regulation S-K")), does not possess an interest in any other transaction for which disclosure would be required under Item 404(a) of Regulation S-K, and is not engaged in a business relationship for which disclosure would be required pursuant to Item 404(b) of Regulation S-K, or (ii) is otherwise considered a "non-employee director" for purposes of Rule 16b-3.

(aa) "***Nonstatutory Stock Option***" means an option granted pursuant to Section 5 that does not qualify as an Incentive Stock Option.

(bb) "***Officer***" means a person who is an officer of the Company within the meaning of Section 16 of the Exchange Act.

(cc) "***Option***" means an Incentive Stock Option or a Nonstatutory Stock Option to purchase shares of Common Stock granted pursuant to the Plan.

(dd) "***Option Agreement***" means a written agreement between the Company and a holder of an Option evidencing the terms and conditions of an Option grant. Each Option Agreement will be subject to the terms and conditions of the Plan.

(ee) "***Other Stock Award***" means an award based in whole or in part by reference to the Common Stock which is granted pursuant to the terms and conditions of Section 6(d).

(ff) "***Other Stock Award Agreement***" means a written agreement between the Company and a holder of an Other Stock Award evidencing the terms and conditions of an Other Stock Award grant. Each Other Stock Award Agreement will be subject to the terms and conditions of the Plan.

(gg) "***Own***," "***Owned***," "***Owner***," "***Ownership***" A person or Entity will be deemed to "Own," to have "Owned," to be the "Owner" of, or to have acquired "Ownership" of securities if such person or Entity, directly or indirectly, through any contract, arrangement, understanding, relationship or otherwise, has or shares voting power, which includes the power to vote or to direct the voting, with respect to such securities.

(hh) "***Participant***" means (i) with respect to any Award, a person to whom such Award is granted pursuant to the Plan or, if applicable, such other person who holds an outstanding Award, and (ii) with respect to any Prior Plan Award, a person to whom such Prior Plan Award is granted pursuant to any Prior Plan or, if applicable, such other person who holds an outstanding Prior Plan Award.

(ii) "***Performance Criteria***" means the one or more criteria that the Board will select for purposes of establishing the Performance Goals for a Performance Period. The Performance Criteria that will be used to establish such Performance Goals may be based on any one of, or combination of, the following, as determined by the Board: (i) earnings (including earnings per share and net earnings); (ii) earnings before interest, taxes and depreciation; (iii) earnings before interest, taxes, depreciation and amortization (EBITDA); (iv) total stockholder return; (v) return on equity or average stockholder's equity; (vi) return on assets, investment, or capital employed; (vii) stock price or stock price performance; (viii) margin (including gross margin); (ix) net income (before or after taxes); (x) operating income; (xi) operating income after taxes; (xii) pre-tax profit; (xiii) operating cash flow; (xiv) sales or revenue targets; (xv) increases in revenue or product revenue; (xvi) expenses and cost reduction goals; (xvii) improvement in or attainment of working capital levels; (xviii) economic value added (or an equivalent metric); (xix) market share; (xx) cash flow; (xxi) cash flow per share; (xxii) share price performance; (xxiii) debt reduction; (xxiv) implementation or completion of projects or processes; (xxv) customer satisfaction; (xxvi) stockholders' equity; (xxvii) capital expenditures; (xxviii) debt levels; (xxix) operating profit or net operating profit; (xxx) workforce diversity; (xxxi) growth of net income or operating income; (xxxii) billings; (xxxiii) submission to, or approval by, a regulatory body (including but not limited to the U.S. Food and Drug Administration) of an applicable filing for a product candidate or other product development milestones; (xxxiv) acquisitions, divestitures, joint ventures, strategic alliances, licenses or collaborations; (xxxv) spin-offs, split-ups, reorganizations, recapitalizations, restructurings, financings (debt or equity) or refinancings; (xxxvi) manufacturing or process development, clinical trial, regulatory, intellectual property, compliance or research objectives; and (xxxvii) any other measures of performance selected by the Board. Partial achievement of the specified criteria may result in the payment or vesting corresponding to the degree of achievement as specified in the applicable Award Agreement.

(jj) "***Performance Goals***" means, for a Performance Period, the one or more goals established by the Board for the Performance Period based upon the Performance Criteria. Performance Goals may be based on a Company-wide basis, with respect to one or more business units, divisions, Affiliates, or business segments, and in either absolute terms or relative to the performance of one or more comparable companies or the performance of one or more relevant indices. The Board is authorized to make appropriate adjustments in the method of calculating the attainment of Performance Goals for a Performance Period as follows: (i) to exclude restructuring and/or other nonrecurring charges; (ii) to exclude exchange rate effects, as applicable, for non-U.S. dollar denominated Performance Goals; (iii) to exclude the effects of changes to generally accepted accounting principles; (iv) to exclude the effects of any statutory adjustments to corporate tax rates; (v) to exclude the effects of items that are "unusual" in nature or occur "infrequently" as determined under generally accepted accounting principles; (vi) to exclude the dilutive effects of acquisitions or joint ventures; (vii) to assume that any business divested by the Company achieved performance objectives at targeted levels during the balance of a Performance Period following such divestiture; (viii) to exclude the effect of any change in the outstanding shares of common stock of the Company by reason of any stock dividend or split, stock repurchase, reorganization, recapitalization, merger, consolidation, spin-off, combination or exchange of shares or other similar corporate change, or any distributions to common stockholders other than regular cash dividends; (ix) to exclude the effects of stock based compensation and/or the award of an annual cash incentive under the Company's Annual Incentive Program; (x) to exclude the effect of any other unusual, non-recurring gain or loss or other extraordinary item; and (xi) to make other appropriate adjustments selected by the Board.

(kk) "***Performance Period***" means the period of time selected by the Board over which the attainment of one or more Performance Goals will be measured for the purpose of determining a Participant's right to and the payment of a Performance Stock Award. Performance Periods may be of varying and overlapping duration, at the sole discretion of the Board.

(ll) "***Performance Stock Award***" means an Award granted under the terms and conditions of Section 6(c).

(mm) "***Plan***" means this Dynavax Technologies Corporation 2018 Equity Incentive Plan.

(nn) "***Restricted Stock Award***" means an award of shares of Common Stock which is granted pursuant to the terms and conditions of Section 6(a).

(oo) "***Restricted Stock Award Agreement***" means a written agreement between the Company and a holder of a Restricted Stock Award evidencing the terms and conditions of a Restricted Stock Award grant. Each Restricted Stock Award Agreement will be subject to the terms and conditions of the Plan.

(pp) "***Restricted Stock Unit Award***" means a right to receive shares of Common Stock which is granted pursuant to the terms and conditions of Section 6(b).

(qq) "***Restricted Stock Unit Award Agreement***" means a written agreement between the Company and a holder of a Restricted Stock Unit Award evidencing the terms and conditions of a Restricted Stock Unit Award grant. Each Restricted Stock Unit Award Agreement will be subject to the terms and conditions of the Plan.

(rr) "***Rule 16b-3***" means Rule 16b-3 promulgated under the Exchange Act or any successor to Rule 16b-3, as in effect from time to time.

(ss) "***Rule 405***" means Rule 405 promulgated under the Securities Act.

(tt) "***Securities Act***" means the Securities Act of 1933, as amended, and the rules and regulations promulgated thereunder.

(uu) "***Stock Appreciation Right***" or "SAR" means a right to receive the appreciation on Common Stock that is granted pursuant to the terms and conditions of Section 5.

(vv) "***Stock Appreciation Right Agreement***" or "SAR Agreement" means a written agreement between the Company and a holder of a Stock Appreciation Right evidencing the terms and conditions of a Stock Appreciation Right grant. Each Stock Appreciation Right Agreement will be subject to the terms and conditions of the Plan.

(ww) "***Subsidiary***" means, with respect to the Company, (i) any corporation of which more than 50% of the outstanding capital stock having ordinary voting power to elect a majority of the board of directors of such corporation (irrespective of whether, at the time, stock of any other class or classes of such corporation will have or might have voting power by reason of the happening of any contingency) is at the time, directly or indirectly, Owned by the Company, and (ii) any partnership, limited liability company or other entity in which the Company has a direct or indirect interest (whether in the form of voting or participation in profits or capital contribution) of more than 50%.

(xx) "***Ten Percent Stockholder***" means a person who Owns (or is deemed to Own pursuant to Section 424(d) of the Code) stock possessing more than 10% of the total combined voting power of all classes of stock of the Company or any Affiliate.

(yy) "***Transaction***" means a Corporate Transaction or a Change in Control.

[THIS PAGE INTENTIONALLY LEFT BLANK]

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, 2021

☐ **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: 001-34207

Dynavax Technologies Corporation

(Exact name of registrant as specified in its charter)

Delaware	**33-0728374**
(State or other jurisdiction of incorporation or organization)	*(IRS Employer Identification No.)*

2100 Powell Street, Suite 900
Emeryville, CA 94608
(510) 848-5100

(Address, including Zip Code, and telephone number, including area code, of the registrant's principal executive offices)

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, $0.001 par value	DVAX	The Nasdaq Stock Market LLC

Securities Registered Pursuant to Section 12(g) of the Act:

None

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

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

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

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registration was required to submit such files). Yes ☒ No ☐

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

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

Emerging growth company ☐

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

Indicate by check mark whether the registrant 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 Act). Yes ☐ No ☒

The aggregate market value of the voting and non-voting stock held by non-affiliates of the registrant, based upon the closing sale price of the common stock on June 30, 2021 as reported on the Nasdaq Capital Market, was approximately $1.0 billion. Shares of common stock held by each officer and director and by each person known to the Company who owns 5% or more of the outstanding common stock have been excluded in that such persons may be deemed to be affiliates. This determination of affiliate status is not necessarily a conclusive determination for other purposes.

As of February 24, 2022, the registrant had outstanding 124,921,757 shares of common stock.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the Definitive Proxy Statement for the registrant's 2022 Annual Meeting of Stockholders are incorporated by reference into Part III, Items 10-14 of this Form 10-K. The Definitive Proxy Statement will be filed no later than 120 days after the close of the registrant's fiscal year ended December 31, 2021.

Auditor Firm Id: 42 Auditor Name: Ernst & Young LLP Auditor Location: San Francisco, California

INDEX

DYNAVAX TECHNOLOGIES CORPORATION

FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K 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, as amended, which are subject to a number of risks and uncertainties. All statements that are not historical facts are forward-looking statements, including statements about the direct and indirect impact of the ongoing COVID-19 global pandemic on our business and operations, including sales of HEPLISAV-B®, our ability to successfully commercialize HEPLISAV-B, CpG 1018 adjuvant or any future product, our anticipated market opportunity and level of sales of HEPLISAV-B and CpG 1018 adjuvant, our ability to manufacture sufficient supply of HEPLISAV-B to meet future demand, our business, collaboration and regulatory strategy, our ability to successfully support the development and commercialization of other vaccines containing our CpG 1018 adjuvant, including any current or potential vaccine for COVID-19 that stem from any collaborations, our ability to manufacture sufficient supply of CpG 1018 to meet potential future demand in connection with new vaccines, including any potential COVID-19 vaccine, our ability to develop and expand our clinical research pipeline, our ability to meet regulatory requirements, uncertainty regarding our capital needs and future operating results and profitability, anticipated sources of funds, liquidity and cash needs, as well as our plans, objectives, strategies, expectations and intentions for our business. These statements appear throughout this Annual Report on Form 10-K and can be identified by the use of forward-looking language such as "may," "will," "should," "expect," "plan," "anticipate," "believe," "estimate," "predict," "future," or "intend," or the negative of these terms or other variations or words of similar import. In addition, statements that "we believe" and similar statements reflect our beliefs and opinions on the relevant subject. These statements are based upon information available to us as of the date of this Annual Report on Form 10-K, and while we believe such information forms a reasonable basis for such statements, such information may be limited or incomplete, and our statements should not be read to indicate that we have conducted an exhaustive inquiry into, or review of, all potentially available relevant information. These statements are inherently uncertain and investors are cautioned not to unduly rely upon these statements.

Actual results may vary materially from those in our forward-looking statements as a result of various factors that are identified in "Item 1A—Risk Factors" and "Item 7—Management's Discussion and Analysis of Financial Condition and Results of Operations" and elsewhere in this Annual Report on Form 10-K. No assurance can be given that the risk factors described in this Annual Report on Form 10-K are all of the factors that could cause actual results to vary materially from the forward-looking statements. All forward-looking statements speak only as of the date of this Annual Report on Form 10-K. Readers should not place undue reliance on these forward-looking statements and are cautioned that any such forward-looking statements are not guarantees of future performance. We assume no obligation to update any forward-looking statements.

This Annual Report on Form 10-K includes trademarks and registered trademarks of Dynavax Technologies Corporation. Products or service names of other companies mentioned in this Annual Report on Form 10-K may be trademarks or registered trademarks of their respective owners. References herein to "we," "our," "us," "Dynavax" or the "Company" refer to Dynavax Technologies Corporation and its subsidiaries.

RISK FACTOR SUMMARY

Below is a summary of material factors that make an investment in our securities speculative or risky. Importantly, this summary does not address all of the risks and uncertainties that we face. Additional discussion of the risks and uncertainties summarized in this risk factor summary, as well as other risks and uncertainties that we face, can be found in the more detailed discussion that follows this summary, and the below summary is qualified in its entirety by that more complete discussion of such risks and uncertainties. You should consider carefully the risks and uncertainties described herein as part of your evaluation of an investment in our securities:

- HEPLISAV-B has been launched in the United States, and approved in the European Union, and there is significant competition in these marketplaces. Since this is our first marketed product, the timing of uptake and distribution efforts are unpredictable and there is a risk that we may not achieve and sustain commercial success for HEPLISAV-B.
- Our business and operations have been and may continue to be adversely affected by the evolving and ongoing COVID-19 global pandemic. We have entered into collaborative relationships to develop vaccines utilizing our CpG 1018 adjuvant, including collaborations to develop vaccines for COVID-19. These collaborations may not be successful. If the combination of patents, trade secrets and other proprietary rights that we rely on to protect our intellectual property rights in CpG 1018 adjuvant or otherwise are inadequate, we may be unable to realize recurring commercial benefit from the development of any vaccines containing CpG 1018 adjuvant.
- Our financial results may vary significantly from quarter to quarter or may fall below the expectations of investors or securities analysts, each of which may adversely affect our stock price.
- We face uncertainty regarding coverage, pricing and reimbursement and the practices of third-party payors, which may make it difficult or impossible to sell certain of our products or product candidates on commercially reasonable terms.
- We are subject to ongoing United States Food and Drug Administration ("FDA") and European Medicines Agency ("EMA") post-marketing obligations concerning HEPLISAV-B, which may result in significant additional expense, and we may be subject to penalties if we fail to comply with regulatory requirements or experience unanticipated regulatory issues with HEPLISAV-B.
- If HEPLISAV-B or any products we develop are not accepted by the market or if regulatory agencies limit our labeling indications, require labeling content that diminishes market uptake of HEPLISAV-B or any other products we develop, or limit our marketing claims, we may be unable to generate significant revenues, if any.
- Many of our competitors have greater financial resources and expertise than we do. If we are unable to successfully compete with existing or potential competitors as a result of these disadvantages, we may be unable to generate sufficient or any revenues and our business will be harmed.
- Servicing our debt requires a significant amount of cash, and we may not have sufficient cash flow from our business to pay our substantial debt. Conversion of our Convertible Notes (defined below) may dilute the ownership interest of our stockholders or may otherwise depress the price of our common stock.
- Despite recent profitability, we have incurred annual net losses in each year since our inception and anticipate that we could continue to incur significant losses for the foreseeable future unless we can successfully commercialize HEPLISAV-B and/or continue to sell significant quantities of our CpG 1018 adjuvant, and if we are unable to sustain profitability, the market value of our common stock will likely decline. Until we are able to generate significant revenues or achieve profitability through product sales on a consistent basis, we may require substantial additional capital to finance our operations.
- We may develop, seek regulatory approval for and market HEPLISAV-B or any other product candidates we may develop outside the U.S. or Europe, requiring a significant commitment of resources. Failure to successfully manage our international operations could result in significant unanticipated costs and delays in regulatory approval or commercialization of our products or product candidates.
- Clinical trials for our commercial product and product candidates are expensive and time consuming, may take longer than we expect or may not be completed at all, and may have uncertain outcomes.
- As a biopharmaceutical company, we engage clinical research organizations ("CROs") to conduct clinical studies, and failure by us or our CROs to conduct a clinical study in accordance with good clinical practice standards and other applicable regulatory requirements could result in disqualification of the applicable clinical trial from consideration in support of approval of a potential product.

- Regulatory authorities may require more clinical trials for our product candidates than we currently expect or are conducting before granting regulatory approval, if regulatory approval is granted at all. Our clinical trials may be extended which may lead to substantial delays in the regulatory approval process for our product candidates and may impair our ability to generate revenue from such product candidates.
- HEPLISAV-B and most of our earlier stage programs, including our CpG 1018 adjuvant, rely on oligonucleotide toll-like receptor ("TLR") agonists. In the event of any serious adverse event data relating to TLR agonists, we may be required to reduce the scope of, or discontinue, our operations, or reevaluate the viability of strategic alternatives.
- As we plan for broader commercialization of HEPLISAV-B and for expanded capacity to manufacture our CpG 1018 adjuvant, our financial commitments to increase supply capacity might outpace actual demand for our products. Also, if we are unable to maintain our production operations in Düsseldorf, Germany, and our existing suppliers for CpG 1018 adjuvant, we would have to establish alternate qualified manufacturing capabilities, which could result in significant additional operating costs and delays in developing and commercializing HEPLISAV-B and any approved or potential vaccine utilizing CpG 1018. There can be no assurance that we, our existing suppliers, or other third parties will be able to produce CpG 1018 at a cost, quantity and quality sufficient to support our existing or any future collaborations.
- We rely on our facility in Düsseldorf, Germany and third parties to supply materials or perform processes necessary to manufacture HEPLISAV-B. We rely on a limited number of suppliers to produce the oligonucleotides we require for development and commercialization. Additionally, we and our collaborators have limited experience in manufacturing our products and product candidates in commercial quantities. With respect to HEPLISAV-B, we use a pre-filled syringe presentation of the vaccine and our ability to meet future demand will depend on our or our contract manufacturer's ability to provide sufficient supply in this presentation.
- As we continue to grow as a commercial organization and enter into supply agreements with customers and collaborators, those supply agreements will have obligations to deliver product for which we are reliant upon third parties to manufacture on our behalf.
- HEPLISAV-B is subject to regulatory obligations and continued regulatory review, and if we receive regulatory approval for our other product candidates, we will be subject to ongoing FDA and foreign regulatory obligations and continued regulatory review for such products.
- A key part of our business strategy for products in development is to establish collaborative relationships to help fund or manage development and commercialization of our product candidates and research programs. We may not succeed in establishing and maintaining collaborative relationships, which may significantly limit our ability to continue to develop and commercialize those products and programs, if at all. These relationships may not succeed on expected timelines, or at all.
- We rely on CROs and clinical sites and investigators for our clinical trials. If these third parties do not fulfill their contractual obligations or meet expected deadlines, our planned clinical trials may be delayed and we may fail to obtain the regulatory approvals necessary to commercialize our product candidates.
- As we focus on commercialization of HEPLISAV-B, we may encounter difficulties in managing our commercial growth and expanding our operations successfully.
- The loss of key personnel could delay or prevent achieving our objectives. In addition, our continued growth to support commercialization may result in difficulties in managing our growth and expanding our operations successfully.
- If third parties successfully assert that we have infringed their patents and proprietary rights or challenge our patents and proprietary rights, we may become involved in intellectual property disputes and litigation that would be costly, time consuming and delay or prevent development or commercialization of our product candidates.
- Future sales of our common stock or the perception that such sales may occur in the public market could cause our stock price to fall.

PART I

ITEM 1. BUSINESS

Our Company

We are a commercial stage biopharmaceutical company dedicated to developing and commercializing innovative vaccines in areas of significant unmet need, leveraging our demonstrated expertise and capabilities in vaccines and our proven vaccine adjuvant technology. We are currently focused on our efforts to drive long-term shareholder value by maximizing utilization of our HEPLISAV-B® hepatitis B vaccine, advancing our CpG 1018® adjuvant supply strategy, most notably through COVID-19 collaborations, and expanding our portfolio of innovative vaccine candidates leveraging our proven adjuvant technology.

Our first marketed product, HEPLISAV-B (Hepatitis B Vaccine (Recombinant), Adjuvanted), is approved in the United States and European Union for prevention of infection caused by all known subtypes of hepatitis B virus ("HBV") in adults age 18 years and older. HEPLISAV-B is the only two-dose hepatitis B vaccine for adults approved in the U.S. and European Union. In Phase 3 trials, HEPLISAV-B demonstrated faster and higher rates of protection with two doses in one month compared to another currently approved hepatitis B vaccine, which requires three doses over six months, with a similar safety profile. We have worldwide commercial rights to HEPLISAV-B and we market it in the United States. We received Marketing Authorization approval of HEPLISAV-B in February 2021 from the European Commission for prevention of infection caused by all known subtypes of HBV in adults age 18 years and older. In May 2021, we entered into a commercialization agreement with Bavarian Nordic for the marketing and distribution of HEPLISAV-B in Germany and we expect to begin distribution in 2022.

We also manufacture and sell CpG 1018 adjuvant, the vaccine adjuvant used in HEPLISAV-B. We developed CpG 1018 adjuvant to provide an increased vaccine immune response, which has been demonstrated in real world commercial use and in a wide range of clinical trials. We are expanding the use of our adjuvant to support the development and potential large-scale manufacturing of additional vaccines through collaborations with multiple vaccine companies, academic groups and in our own vaccine development programs. Current adjuvant supply collaborations primarily include a diverse, global portfolio of COVID-19 vaccine developers.

We expect to drive future innovation through our clinical pipeline and discovery efforts. Currently, we have three clinical development programs, and additional pre-clinical and clinical collaborations:

- Our tetanus, diphtheria, and acellular pertussis (“Tdap”) booster vaccine candidate, adjuvanted with CpG 1018, is in a Phase 1 clinical trial evaluating the safety, tolerability, and immunogenicity of the vaccine, with topline data for adults expected in the first half of 2022, and topline data for adolescents expected in the second half of 2022.
- Our investigational shingles vaccine candidate, adjuvanted with CpG 1018, is currently in a Phase 1 clinical trial evaluating the safety, tolerability, and immunogenicity of the vaccine, with topline data expected by the end of 2022.
- In collaboration with, and fully funded by, the U.S. Department of Defense, we plan to conduct a phase 2 clinical trial for a plague vaccine adjuvanted with CpG 1018, which is anticipated to begin in the second half of 2022.
- We are also working to advance product candidates utilizing our CpG 1018 adjuvant through pre-clinical and clinical collaborations and additional discovery efforts with third-party research organizations, including an ongoing collaboration with the Icahn School of Medicine at Mount Sinai ("Mount Sinai"), investigating universal and seasonal influenza vaccine candidates.

Adjuvant Technology Overview: Toll-like Receptor Immune Modulation Platform

Toll-like receptors (“TLRs”) are a family of transmembrane proteins that play a vital role in innate immunity and subsequent adaptive immunity. Signaling through these receptors is triggered by the binding of a variety of pathogen-associated molecules and is essential to generation of innate immunity. The innate immune response is, in effect, the first line of defense against viruses, bacteria and other potential pathogens. The innate response also initiates and regulates the generation of an adaptive immune response composed of highly specific antibodies and T cells. Compounds that stimulate enhanced immune responses are generally referred to as adjuvants.

Our work in this area has been focused primarily on stimulation of a subset of TLRs that have evolved to recognize bacterial and viral nucleic acids. This work resulted in the identification of proprietary unmethlyated synthetic

oligonucleotides (short segments of deoxyribonucleic acid ("DNA")), that mimic the activity of microbial DNA, and selectively activate one of these important receptors, TLR9. These TLR9 agonists are called CpG oligonucleotides – or "CpGs" for short – referring to the presence of specific nucleotide sequences containing the CG base pair.

Our vaccine research to date has focused on the use of TLR9 agonists as novel vaccine adjuvants. B-Class TLR9 agonists, such as our CpG 1018 adjuvant, stimulate release of cytokines necessary for T cell activation and establishing long-term immunity. TLR9 stimulation also helps generate memory Th1 cells that can stimulate the immune system to induce long-lasting effects. As a result, TLR9 adjuvanted vaccines induce a specific Th1 immune response and more durable levels of protective antibodies relative to non-adjuvanted vaccines. Our CpG 1018 adjuvant has an established tolerability profile demonstrated in a wide range of clinical trials and real-world, commercial use, and has consistently demonstrated its ability to enhance the immune response without excessive reactogenicity in HEPLISAV-B and multiple COVID-19 clinical trials.

Key 2021 Highlights and Performance Against Core Priorities

Maximize Growth of HEPLISAV-B [Hepatitis B Vaccine (Recombinant), Adjuvanted]

- We recognized approximately $61.9 million in product revenue related to sales of HEPLISAV-B in the U.S. during the year ended December 31, 2021, representing a 72% increase compared to the year ended December 31, 2020. This increase was primarily driven by an increase in HEPLISAV-B demand and market share gains in the U.S. in 2021, compared to 2020;
- In April 2021, we announced the results of the post-marketing study assessing the rates of occurrence of acute myocardial infarction ("AMI") in persons receiving HEPLISAV-B compared with Engerix-B. The results provided evidence there is no increased risk of AMI associated with vaccination with HEPLISAV-B compared to Engerix-B; and
- In October 2021, the U.S. Centers for Disease Control and Prevention's ("CDC") Advisory Committee on Immunization Practices ("ACIP") recommended that all adults aged 19-59 be vaccinated against hepatitis-B. This universal recommendation created a significantly expanded market opportunity in the U.S., compared to the more limited prior recommendation to vaccinate at-risk populations, which we believe has greatly simplified prescribing practices.

Expand CpG 1018 Adjuvant Supply Business for COVID-19 Vaccines

- We recognized approximately $375.2 million in product revenue related to sales of CpG 1018 adjuvant to our global portfolio of partners developing COVID-19 vaccines during the year ended December 31, 2021. This represented a transformative increase compared to $3.3 million in adjuvant sales during the year ended December 31, 2020;
- Two of our adjuvant collaborators' COVID-19 vaccine candidates, adjuvanted with CpG 1018, were approved for emergency use during the year ended December 31, 2021; additional collaborators' successful phase 3 clinical data consistently demonstrated the value of CpG 1018 adjuvant across multiple vaccine platforms; and
- We continued to expand our manufacturing capacity to meet our partners' needs for adjuvant in 2022 and beyond.

Drive Innovation Through Clinical Pipeline Expansion and Discovery

- We continued enrollment and made progress on our Tdap-1018 phase 1 clinical trial evaluating the safety, tolerability, and immunogenicity of the vaccine, with topline data in adults and adolescents expected during 2022;
- In September 2021, we entered into a fully-funded collaboration with the U.S. Department of Defense to conduct a Phase 2 clinical trial for a plague vaccine adjuvanted with CpG 1018, which is expected to start in 2022;
- In January 2022, we announced the initiation of a phase 1 clinical trial evaluating the safety, tolerability, and immunogenicity of our investigational shingles vaccine candidate adjuvanted with CpG 1018; and
- During the year, we further invested in our pre-clinical and clinical collaborations and discovery efforts, including our ongoing collaboration with Mount Sinai investigating universal and seasonal influenza.

Corporate and Financial Highlights

- We delivered net income of $76.7 million during the year ended December 31, 2021, representing our first full year of profitability;

- We generated $335.5 million in positive cash flow from operations during the year ended December 31, 2021, and ended the year with $546.0 million in cash, cash equivalents and marketable securities;
- We issued $225.5 million in 2.50% convertible senior notes due 2026. We used $190.2 million of the net proceeds to repay, in full, our previously outstanding 9.5% term loan due 2023, and $27.2 million to pay the costs of capped call transactions; and
- We increased the funding under our arrangement with Coalition for Epidemic Preparedness Innovations ("CEPI") in May 2021 to approximately $176.4 million, which supported the advance manufacturing cost of CpG 1018 adjuvant sold to or reserved for certain of our collaborators working to advance COVID-19 vaccine candidates, adjuvanted with CpG 1018.

Impact of COVID-19 Pandemic to our Business

Significant uncertainties remain with respect to the extent and duration of the impact of COVID-19 on our business and operations. The pandemic has resulted in changes to our business and operations which impacted our financial condition and results of operations for the year ended December 31, 2021, and 2020, and it may have a material adverse impact on our business and financial condition in the future. We continue to closely monitor the impact of the evolving effects of the COVID-19 pandemic on our business. In the process, we have made proactive efforts designed to help protect the health and safety of our workforce, as well as those of patients and healthcare professionals, while preserving the continuity of our business operations and advancing our goal of bringing important new vaccines to patients as rapidly as possible. While adult hepatitis B vaccine utilization rates have continued to stay below pre-pandemic levels, we are starting to see a recovery in such utilization from all-time lows. Additionally, HEPLISAV-B continues to gain market share in the U.S. hepatitis B adult vaccine market. The impact of COVID-19 on our business and financial condition is more fully described below in Part II, Item 7: *Management's Discussion and Analysis of Financial Condition and Results of Operations.*

OUR STRATEGY

Our vision is to become a leading vaccines company dedicated to developing and commercializing innovative vaccines in areas of significant unmet need, leveraging our demonstrated expertise and capabilities in vaccines and our proven vaccine adjuvant technology. Our strategy is focused on three core priorities: drive growth in our HEPLISAV-B vaccine, execute on our CpG 1018 adjuvant supply business and drive innovation through clinical pipeline expansion and discovery. Key elements of our strategy include:

- driving growth in our HEPLISAV-B vaccine (i) in the U.S. through expansion of overall market share and market share for the accounts which we target directly with our field-based salesforce and (ii) collaborating with global partners who share our vision, values, culture, and processes to develop and commercialize our HEPLISAV-B vaccine outside of the U.S.;
- delivering our proprietary CpG 1018 adjuvant to a diverse portfolio of global collaborators for COVID-19 vaccine development;
- expanding our clinical research pipeline by leveraging our demonstrated expertise and proven adjuvant technology in areas of unmet need, including for improved vaccines that may provide greater immunogenicity, lower reactogenicity and longer immune durability compared to currently marketed products;
- assembling a passionate team with demonstrated clinical and commercial success in discovering, developing and marketing vaccines that protect the world against infectious diseases;
- evaluating innovative, externally developed products for in-licensing or acquisition opportunities, with priority given to vaccine assets that address clear unmet need, provide scientific innovation, sound mechanistic rationale, a strong clinical safety profile, and a clear development path towards commercialization in disease areas primarily managed by our existing field-based salesforce footprint; and
- executing our strategy with our stockholders' long-term interests in mind and focusing on long-term, sustainable value creation over time.

HEPLISAV-B (Hepatitis B Vaccine, (Recombinant), Adjuvanted)

Our first commercial product, HEPLISAV-B (Hepatitis B Vaccine, (Recombinant), Adjuvanted), is approved by the United States Food and Drug Administration ("FDA") and the European Commission for prevention of infection caused by all known subtypes of HBV in adults age 18 years and older. HEPLISAV-B combines CpG 1018, our proprietary TLR9

agonist adjuvant, and recombinant hepatitis B surface antigen ("rHBsAg" or "HBsAg") that is manufactured by Dynavax GmbH, our wholly owned subsidiary, in Düsseldorf, Germany. HEPLISAV-B and each of the vaccines it directly competes against use rHBsAg to elicit an immune response to the virus.

About Hepatitis B

Hepatitis B is a potentially life-threatening liver infection caused by the HBV which may cause chronic infection and put people at high risk of death from cirrhosis and liver cancer. There is no cure for hepatitis B, but the disease can be prevented through effective vaccination. The World Health Organization ("WHO") and the CDC have set a goal to eliminate all viral hepatitis infections, including hepatitis B, globally by 2030, and are calling for a continued commitment to increase services to eliminate hepatitis. The WHO estimates that worldwide, approximately 296 million people were living with chronic hepatitis B in 2019. In addition, the CDC estimated that in 2016 approximately 862,000 people in the U.S. were living with HBV infection. There were a total of 3,322 new cases of acute hepatitis B reported to the CDC in 2018. However, after adjusting for under-ascertainment and under reporting, the CDC estimated that 21,600 acute hepatitis B cases occurred in the U.S. in 2018.

Recommendations for Adult Vaccination to Prevent Hepatitis B

The CDC's ACIP unanimously voted at its November 2021 meeting to recommend that all adults 19 to 59 years of age should receive a hepatitis B vaccination. This universal recommendation greatly simplifies the identification of patients who need a hepatitis B vaccine compared to the previous risk-based recommendation, and significantly expands the number of adults in the United States who should be vaccinated against hepatitis B under CDC recommendation.

This recommendation is a significant milestone for hepatitis B prevention, making hepatitis B the fifth vaccine routinely recommended for adult immunization along with influenza, Tdap, shingles and pneumococcal. Based on this opportunity, we have begun to launch innovative marketing campaigns targeting consumers and healthcare providers to increase the awareness of HEPLISAV-B as the only two-dose hepatitis B vaccine option, with broad protection across most patient types.

Protection Against Hepatitis B by HEPLISAV-B

The approval of HEPLISAV-B by the FDA was based on data from three Phase 3 non-inferiority trials involving nearly 10,000 adult participants who received HEPLISAV-B. These pivotal studies compared HEPLISAV-B administered in two doses over one month to Engerix-B® administered in three doses over a six-month schedule. Results from HBV-23, the largest Phase 3 trial, which included 6,665 participants, showed that HEPLISAV-B demonstrated a statistically significantly higher rate of protection of 95% compared with 81% for Engerix-B. Across the three clinical trials, the most common local reaction was injection site pain (23% to 39%). The most common systemic reactions were fatigue (11% to 17%) and headache (8% to 17%).

Dynavax has worldwide commercial rights to HEPLISAV-B. In addition to HEPLISAV-B, there are four other vaccines approved for the prevention of hepatitis B in the U.S.: Engerix-B and Twinrix® from GlaxoSmithKline plc (GSK), Recombivax-HB® from Merck & Co. ("Merck") and PreHevbrio™ from VBI Vaccines Inc. HEPLISAV-B is currently approved in the U.S. and the EU for the prevention of hepatitis B in adults. We are also considering additional territories where it would be commercially feasible to market HEPLISAV-B.

The largest segments of the market are concentrated in independent hospitals and clinics, integrated delivery networks, dialysis centers, public health clinics and prisons, the Departments of Defense and Veterans Affairs and retail pharmacies. Our promotional activity is focused on the largest accounts in each segment. Our field sales force of approximately 100 people are targeting customers that we believe represent, in the aggregate, approximately 60% of hepatitis B vaccine doses administered in the U.S., with an overall objective to increase market share.

We continue to explore ways to enhance the clinical profile of HEPLISAV-B. We completed an open-label, single arm study of a 4-dose regimen of HEPLISAV-B in adults with end-stage renal disease who are initiating or undergoing hemodialysis. Final immunogenicity results included a seroprotection rate of 89.3% with high levels of anti-HBs antibodies. Safety data showed HEPLISAV-B was well tolerated and no safety concerns were observed. The safety and effectiveness of HEPLISAV-B in adults on hemodialysis have not yet been established. This study alone, regardless of results, may not be sufficient to support a label change to include dialysis patients. If we receive approval of this dosing schedule, we expect to add dialysis centers to our personal promotion efforts, which could increase our coverage of the U.S. market to approximately 75%.

PROPRIETARY CPG 1018 VACCINE ADJUVANT

We believe the favorable immunogenicity and safety results achieved with HEPLISAV-B utilizing our CpG 1018 adjuvant support our efforts to develop it as a broadly useful vaccine adjuvant platform. CpG 1018 adjuvant has an established profile for the potential development of safe and effective vaccines. It has a well-defined mechanism of action, targeting select immune system cells, with well-characterized effects on the immune response that mimic the immune response to naturally occurring TLR9 agonists in pathogens. This results in potent adjuvant activity for antibody responses. In HEPLISAV-B, our CpG 1018 adjuvant drives faster and consistently higher rates of seroprotection than Engerix-B, even in the elderly and populations known to be less responsive to other vaccines. CpG 1018 adjuvant differentially elicits a preferred T Helper 1 ("Th1") cell polarized response and drives protective antibody production. CpG 1018 adjuvant has a large safety database that indicates a favorable reactogenicity profile with lower reactogenicity compared to other adjuvants.

We have established several clinical and preclinical collaborations with vaccine developers to evaluate CpG 1018 adjuvanted vaccine product candidates against flu, other infectious diseases, and particularly COVID-19 across a variety of vaccine platforms. Data from studies in non-human primates demonstrate our CpG 1018 adjuvant can elicit a robust immune response to COVID-19 and protect animals from infection in challenge studies. Results from Phase 2 and 3 human clinical studies demonstrated CpG 1018 adjuvanted vaccines induced a high level of efficacy and strong immune responses, including neutralizing antibodies and Th1-biased cell-mediated immunity, and demonstrated a favorable safety and tolerability profile.

CpG 1018 Adjuvant Supply Partnerships for COVID-19 Vaccine Development

To support the fight against COVID-19, we have entered into certain supply relationships with a diverse portfolio of vaccine developers to supply CpG 1018 adjuvant for their use in development and/or commercialization of COVID-19 vaccines. To-date, two of our supply partners' vaccine candidates utilizing CpG 1018 adjuvant, have been approved for emergency use. Additionally, Phase 3 clinical data from other partnered programs consistently demonstrated the value of our adjuvant across multiple vaccine platforms with additional regulatory authorization for partners' COVID-19 vaccines anticipated in 2022. We continue to expand manufacturing capacity to meet our collaborators' needs for our adjuvant in 2022 and beyond.

Clover Biopharmaceuticals

In June 2021, we entered into an agreement with Zhejiang Clover Biopharmaceuticals, Inc. and Clover Hong Kong Inc. (collectively, "Clover"), for the commercial supply of CpG 1018 adjuvant, for use with Clover's COVID-19 vaccine candidate, SCB-2019 ("Clover Supply Agreement"). Under the Clover Supply Agreement, Clover has committed to purchase specified quantities of CpG 1018 adjuvant, at pre-negotiated prices pursuant to an agreement with the Coalition for Epidemic Preparedness Innovations ("CEPI"), for use in Clover's commercialization of vaccines containing SCB-2019 and CpG 1018 adjuvant. The Clover Supply Agreement also provides specified terms for Clover to order and take delivery of additional quantities of CpG 1018 adjuvant beyond the quantities reserved by CEPI. In September 2021, Clover reported that SCB-2019 achieved the primary and secondary efficacy endpoints, with a favorable safety profile, in a global Phase 2/3 clinical trial.

Biological E. Limited

In July 2021, we entered into an agreement with Biological E. Limited ("Bio E"), for the commercial supply of CpG 1018 adjuvant, for use with Bio E's subunit COVID-19 vaccine candidate, CORBEVAX™ (the "Bio E Supply Agreement"). Under the Bio E Supply Agreement, Bio E has committed to purchase specified quantities of CpG 1018 adjuvant, at pre-negotiated prices pursuant to the CEPI Agreement, for use in Bio E's commercialization of its CORBEVAX vaccine with specified delivery dates in 2021 and the first quarter of 2022. The Bio E Supply Agreement also provides specified terms for Bio E to order and take delivery of additional quantities of CpG 1018 adjuvant beyond the quantities reserved by CEPI. In December 2021, CORBEVAX received approval for emergency use from the Drugs Controller General of India.

Medigen Vaccine Biologics

In February 2021, we entered into a Supply Agreement with Medigen Vaccine Biologics (Medigen) to manufacture and supply specified quantities of CpG 1018 adjuvant for use in the development and commercialization of Medigen's COVID-19 vaccine, adjuvanted with our CpG 1018 adjuvant, MVC-COV1901, for delivery in the first and second quarters of 2021. In August 2021, we entered into a second supply agreement to manufacture and supply additional specified

quantities of CpG 1018 adjuvant for delivery in the third and fourth quarter of 2021. In August 2021, Medigen launched MVC-COV1901 after receiving Taiwan Emergency Use Authorization and approval for inclusion in Taiwan's COVID-19 vaccine immunization program.

Valneva Scotland Limited

In the third quarter of 2020, we entered into a commercial supply agreement with Valneva Scotland Limited ("Valneva") to supply CpG 1018 adjuvant for its SARS-COV-2 vaccine candidate, VLA2001, in connection with Valneva's supply agreement with the United Kingdom Government and subject to the terms of such agreement ("Valneva Supply Agreement"). In September 2021, the United Kingdom Government terminated its supply agreement with Valneva. In October 2021, Valneva reported that VLA2001 met both co-primary endpoints in the COV-COMPARE trial, and that VLA2001 was well-tolerated, demonstrating a statistically significant better tolerability profile compared to active comparator vaccine, AstraZeneca's AZD1222 (ChAdOx1-S).

In October 2021, we entered into a letter agreement (the "Valneva Amendment"), amending the Valneva Supply Agreement. Under the Valneva Amendment, we and Valneva agreed to the cancellation of the two then-outstanding purchase orders for CpG 1018 adjuvant under the Valneva Supply Agreement that had not been fulfilled as of the date of the Valneva Amendment, and Valneva concurrently committed to purchase a reduced amount of CpG 1018 adjuvant under a new purchase order. We were entitled to retain the advance payments made by Valneva under such cancelled purchase orders to the extent such advance payments did not count towards the advance payments due under the Valneva Amendment.

Our Vaccine Research and Development Pipeline

We are building an innovative pipeline of investigational vaccine product candidates, leveraging our proven adjuvant technology. A summary of our pipeline programs follows:

Tdap Vaccine Phase 1 Study

Pertussis (whooping cough) is a serious illness in people of all ages and can be life-threatening, especially in infants. Whooping cough is caused by the highly contagious respiratory bacterium, *Bordetella pertussis*. People with pertussis usually spread the disease to others by coughing, sneezing or spending time in the same breathing environment. According to the CDC, there are an estimated 24.1 million cases of pertussis and about 160,700 deaths per year globally. The resurgence of B. pertussis in multiple countries has been attributed to the Tdap vaccine's limited duration of protection and inability to block nasal colonizing infections, thereby failing to alter transmission. Our Tdap booster vaccine candidate adjuvanted with CpG 1018 is anticipated to improve the durability and protection against pertussis colonization in the upper airways by redirecting T cell responses and enhancing protective antibody responses in a booster vaccine. Initial proof-of-concept preclinical animal model data demonstrated that inclusion of CpG 1018 adjuvant in prime/boost vaccinations reduces bacterial burden in the upper and lower airways compared Tdap vaccination alone.

In June 2017, we entered into an agreement with Serum Institute of India Pvt. Ltd. ("SIIPL") to collaborate on development and commercialization of certain potential vaccines including Tdap booster adjuvated with CpG1018. Topline data is expected in 2022 from our ongoing Tdap-1018 phase 1 clinical trial evaluating the safety, tolerability, and immunogenicity in adults and adolescents. Under the collaboration, we have exclusive worldwide rights to commercialize the vaccine, except that SIIPL has exclusive rights to distribute in India and to fulfill WHO/United Nations Children's Fund ("UNICEF") tender contracts. Each party is responsible for clinical development cost in their respective territories.

Herpes Zoster Virus (Shingles) Vaccine Phase 1 Study

Shingles is an extremely painful consequence of the reactivation of a latent varicella-zoster virus ("VZV") infection, with attacks leading to potential complications including chronic pain. The current shingles vaccine market is approximately $2 billion and expected to grow over time. Our CpG 1018 adjuvant has demonstrated its ability to enhance the immune response without excessive reactogenicity in both HEPLISAV-B and multiple COVID-19 clinical trials. Importantly, CpG 1018 has shown the ability to generate high levels of CD4+-cells which have been demonstrated to be key cell types in controlling latent VZV infection to avoid reactivation leading to shingles, with potentially lower reactogenicity compared to the current standard of care.

In January 2022, we announced the initiation of a phase 1 clinical trial of our shingles vaccine candidate, adjuvanted with CpG 1018. The global phase 1 study is designed to evaluate safety, tolerability and immunogenicity of the vaccine

candidate which is comprised of glycoprotein E (gE) plus CpG 1018 adjuvant. Topline data from this trial is expected by the end of 2022.

U.S. Department of Defense (Plague Vaccine) Phase 2 Study

In September 2021, we entered into an agreement with the U.S. Department of Defense ("DoD") for the development of a recombinant plague vaccine adjuvanted with CpG 1018 for approximately $22.0 million over two and a half years. Under the agreement, we will conduct a Phase 2 clinical trial combining our CpG 1018 adjuvant with the DoD's rF1V vaccine to show that two doses of CpG 1018 adjuvanted vaccine is non-inferior compared to three doses of the aluminum-adjuvanted vaccine. We anticipate the Phase 2 trial will commence in 2022.

INTELLECTUAL PROPERTY

Our commercial success depends in part on our ability to obtain and maintain proprietary protection for our product candidates, technology and know-how, to operate without infringing the proprietary rights of others and to prevent others from infringing our proprietary rights. Generally, we seek patent protection in the U.S and foreign countries on a selective basis to further protect the inventions that we or our partners consider important to the development of our business. We also rely on trade secrets and contracts to protect our proprietary information.

As of December 31, 2021, our intellectual property portfolio included over 25 issued U.S. patents, over 60 granted foreign patents and over 25 additional owned or co-owned pending U.S. and foreign patent applications claiming compositions containing TLR agonists or antagonists, methods of use, and/or methods of manufacture thereof. Some of these patents and patent applications relate to our discontinued immuno-oncology programs. Reductions in counts, relative to prior years, are reflective of the expiration of or decision to discontinue maintenance of older foreign patents that were not relevant to our active vaccine programs. We have three issued U.S. patents relating to certain uses of HEPLISAV-B that expire in 2032.

Individual patents extend for varying periods depending on the date of filing of the patent application or the date of patent issuance and the legal term of patents in the countries in which they are obtained. Generally, patents issued in the U.S. are effective for 20 years from the earliest effective filing date.

In addition, in certain instances, a patent term can be extended to recapture a portion of the term effectively lost as a result of the FDA regulatory review period. The duration of patents varies in accordance with provisions of applicable local law, but typically is 20 years from the filing date. Our patent estate, based on patents existing now and expected by us to issue based on pending applications, will expire on dates ranging from 2022 to 2042.

The actual protection afforded by a patent varies on a product-by-product basis, from country-to-country and depends upon many factors, including the type of patent, the scope of its coverage, the availability of regulatory related extensions, the availability of legal remedies in a particular country and the validity and enforceability of the patents.

Because patent applications in the U.S. and many foreign jurisdictions typically are not published until 18 months after filing and publications of discoveries in the scientific literature often lag behind actual discoveries, we cannot be certain that we were the first to file for protection of the inventions set forth in these patent applications or in our issued patents. Further, there could be proceedings such as *inter partes* review (IPR), post grant review (PGR), reexamination, reissue or opposition which could result in claims in our patents being narrowed or even invalidated.

Our commercial success depends significantly on our ability to operate without infringing patents and proprietary rights of third parties. A number of pharmaceutical companies and biotechnology companies, as well as universities and research institutions, may have filed patent applications or may have been granted patents that cover inventions similar to the inventions owned by or licensed to us. We cannot determine with certainty whether patents or patent applications of other parties may materially affect our ability to make, use or sell any products. If another party controls patents or patent applications covering our products, we may not be able to obtain the rights we need to those patents or patent applications in order to commercialize our products.

Litigation may be necessary to enforce patents issued or licensed to us or to determine the scope or validity of another party’s proprietary rights. The existence of third-party patent applications and patents could significantly reduce the coverage of the patents owned by or licensed to us and limit our ability to obtain meaningful patent protection. Litigation or any other proceedings could result in substantial costs to and diversion of effort by us, and an adverse outcome in a court or patent office could subject us to significant liabilities, require disputed rights to be licensed from other parties, or require us to cease using some of our technology. We may not prevail in these actions or proceedings, if any.

In addition, other parties may duplicate, design around or independently develop similar or alternative technologies to ours or our licensors.

We may rely, in some circumstances, on trade secrets and confidentiality agreements to protect our technology. Although trade secrets are difficult to protect, wherever possible, we use confidential disclosure agreements to protect the proprietary nature of our technology. Our policy is to require each of our collaborators, commercial partners, employees, consultants and advisors to enter into an agreement before beginning their employment, consulting or advisory relationship with us that in general provides that the individuals must keep confidential and not disclose to other parties any of our confidential information developed or learned by the individuals during the course of their relationship with us except in limited circumstances. These agreements also generally provide that we own all inventions conceived by the individuals in the course of rendering their employment or services to us. However, there can be no assurance that these agreements will not be breached, that we will have adequate remedies for any breach, or that our trade secrets and/or proprietary information will not otherwise become known or be independently discovered by competitors. To the extent that our employees, consultants or contractors use intellectual property owned by others in their work for us, disputes may also arise as to the rights in related or resulting know-how and inventions.

COMPETITION

The biotechnology and pharmaceutical industries are characterized by rapidly advancing technologies, intense competition and a strong emphasis on proprietary products. Our products and development programs compete with several commercially available vaccine and adjuvant products. Many companies and institutions are making substantial investments in developing additional vaccines and adjuvants that could compete directly or indirectly with our marketed products and products under development by us and our collaborators. For example, while we recently announced a new shingles vaccine candidate, around the same time, Pfizer and Biontech also announced competing shingles programs. The approved products from these programs will all need to compete with a single approved vaccine currently available in the U.S.

We also believe our CpG 1018 adjuvant, which we use in our own products and product candidates and provide to our collaborators, is as or more effective than other available adjuvants and, being a yeast-derived product, is far more sustainable that other available products that are derived from, for example, shark squalene or tree bark. Regardless, there can be no guarantee that we can compete with other companies for sales of adjuvant, or any approved vaccine.

Competition for HEPLISAV-B

HEPLISAV-B, a two-dose in one month adult hepatitis B vaccine, competes directly with conventional three-dose over six months marketed vaccines Engerix-B from GSK, as well as Recombivax-HB marketed by Merck. There are also modified schedules of conventional hepatitis B vaccines for limited age ranges that are approved in the EU and the U.S. In addition, HEPLISAV-B competes against Twinrix, a bivalent vaccine marketed by GSK for protection against hepatitis B and hepatitis A. A three dose HBV vaccine manufactured by VBI Vaccines Inc. (“VBI”) is approved in Israel and the U.S. While we believe that HEPLISAV-B competes very well with other approved vaccines available on the market, we are still a relatively new entrant and we face significant competition in our longer term goal to capture a majority of U.S. market share. While we may explore additional territories outside of the U.S. and the EU to market HEPLISAV-B, in doing so we will likely face competition from these or other products and competitors.

Competition for our adjuvant supply supporting COVID-19 and our development pipeline including pertussis, shingles and other potential pipeline indications

We are also in competition with companies developing vaccines, and vaccine adjuvants, generally, including, among others, GSK, Pfizer, Inc., Sanofi S.A., Merck, Novartis International AG, Agenus, Inc., Emergent BioSolutions, Inc., Novavax, Inc., Medicago Inc., Valneva, AstraZeneca plc, Moderna, Inc., Johnson & Johnson and VBI.

Many of the entities developing or marketing these competing products have significantly greater financial resources and expertise in research and development, manufacturing, preclinical testing, conducting clinical trials, obtaining regulatory approvals and marketing than we do. Smaller or early-stage companies may also prove to be significant competitors, particularly through collaborative agreements with large, established companies with access to capital. These entities may also compete with us in recruiting and retaining qualified scientific and management personnel, as well as in acquiring technologies complementary to or necessary for our programs.

REGULATORY CONSIDERATIONS

Government Regulation

The FDA and comparable regulatory agencies in state and local jurisdictions and in foreign countries impose extensive requirements upon the clinical development, pre-market approval, manufacture, labeling, marketing, promotion, pricing, import, export, storage and distribution of biopharmaceuticals. These agencies and other regulatory agencies regulate research and development activities and the testing, approval, manufacture, quality control, safety, effectiveness, labeling, storage, recordkeeping, advertising and promotion of drugs and biologics. Failure to comply with applicable FDA or foreign regulatory agency requirements may result in warning letters, fines, civil or criminal penalties, additional reporting obligations and/or agency oversight, suspension or delays in clinical development, recall or seizure of products, partial or total suspension of production or withdrawal of a product from the market.

In the United States, the FDA regulates drug products under the Federal Food, Drug, and Cosmetic Act and its implementing regulations and biologics additionally under the Public Health Service Act. The process required by the FDA before biopharmaceuticals may be marketed in the United States generally involves the following:

- submission to the FDA of an IND, which must become effective before human clinical trials may begin and must be updated annually;
- completion of extensive pre-clinical laboratory tests and pre-clinical animal studies, all performed in accordance with the FDA's Good Laboratory Practice ("GLP") regulations;
- performance of adequate and well controlled human clinical trials to establish the safety and efficacy of the product for each proposed indication;
- submission to the FDA of a new drug application or a biologics license application, NDA or BLA, depending on the nature of the product after completion of all pivotal clinical trials to demonstrate the safety, purity and potency of the product for the indication for use;
- a determination by the FDA to accept the application for review;
- satisfactory completion of an FDA pre-approval inspection of the manufacturing facilities to assess compliance with the FDA's current good manufacturing practices ("cGMP") regulations for pharmaceuticals; and
- FDA review and approval of an NDA or BLA prior to any commercial marketing or sale of the product in the United States.

The development and approval process requires substantial time, effort and financial resources, and we cannot be certain that any approvals for our product candidates, or those of our collaborators, will be granted on a timely basis, if at all.

The results of pre-clinical tests (which include laboratory evaluation as well as GLP studies to evaluate toxicity in animals) for a particular product candidate, together with related manufacturing information and analytical data, are submitted as part of an IND to the FDA. The IND automatically becomes effective 30 days after receipt by the FDA, unless the FDA, within the thirty-day time period, raises concerns or questions about the conduct of the proposed clinical trial, including concerns that human research subjects will be exposed to unreasonable health risks. In such a case, the IND sponsor and the FDA must resolve any outstanding concerns before the clinical trial can begin. IND submissions may not result in FDA authorization to commence a clinical trial. A separate submission to an existing IND must also be made for each successive clinical trial conducted during product development. Further, an independent institutional review board, or IRB, for each medical center proposing to conduct the clinical trial must review and approve the plan for any clinical trial before it commences at that center and it must monitor the study until completed. The FDA, the IRB or the sponsor may suspend a clinical trial at any time on various grounds, including a finding that the subjects or patients are being exposed to an unacceptable health risk. Clinical testing also must satisfy extensive good clinical practice ("GCP") regulations and regulations for informed consent and privacy of individually identifiable information.

Clinical Trials. For purposes of an NDA or BLA submission and approval, clinical trials are typically conducted in the following sequential phases, which may overlap:

- *Phase 1*. Studies are initially conducted in a limited population to test the product candidate for safety, dose tolerance, absorption, distribution, metabolism, and excretion, typically in healthy humans, but in some cases in patients.
- *Phase 2*. Studies are generally conducted in a limited patient population to identify possible adverse effects and safety risks, explore the initial efficacy of the product for specific targeted indications and to determine dose range or pharmacodynamics. Multiple Phase 2 clinical trials may be conducted by the sponsor to obtain information prior to beginning larger and more expensive Phase 3 clinical trials.
- *Phase 3*. These are commonly referred to as pivotal studies. When Phase 2 evaluations demonstrate that a dose range of the product is effective and has an acceptable safety profile, Phase 3 clinical trials are undertaken in large patient populations to further evaluate dosage, provide substantial evidence of clinical efficacy and further test for safety in an expanded and diverse patient population at multiple, geographically dispersed clinical trial centers.
- *Phase 4*. The FDA may approve an NDA or BLA for a product candidate, but require that the sponsor conduct additional clinical trials to further assess the product after approval under a post-marketing commitment or post-marketing requirement. In addition, a sponsor may decide to conduct additional clinical trials after the FDA has approved a product. Post-approval trials are typically referred to as Phase 4 clinical trials.

The results of biologic development, pre-clinical studies and clinical trials are submitted to the FDA as part of an NDA or BLA. Applications also must contain extensive manufacturing and control information. Applications must be accompanied by a significant user fee. Once the submission has been accepted for filing, the FDA's goal is to review applications within ten months of submission or, if the application relates to an unmet medical need in a serious or life-threatening indication, eight months from submission. The review process is often significantly extended by FDA requests for additional information or clarification. The FDA will typically conduct a pre-approval inspection of the manufacturer to ensure that the product can be reliably produced in compliance with cGMPs and will typically inspect certain clinical trial sites for compliance with GCP. The FDA may refer the application to an advisory committee for review, evaluation and recommendation as to whether the application should be approved. The FDA is not bound by the recommendation of an advisory committee, but it typically follows such recommendations. The FDA may deny approval of an application by issuing a Complete Response Letter if the applicable regulatory criteria are not satisfied. A Complete Response Letter may require additional clinical data and/or trial(s), and/or other significant, expensive and time- consuming requirements related to clinical trials, pre-clinical studies or manufacturing. Approval may occur with boxed warnings on product labeling or Risk Evaluation and Mitigation Strategies, which limit the labeling, distribution or promotion of a product. Once issued, the FDA may withdraw product approval if ongoing regulatory requirements are not met or if safety problems occur after the product reaches the market. In addition, the FDA may require testing, including Phase 4 clinical trials, and surveillance programs to monitor the safety effects of approved products which have been commercialized and the FDA has the power to prevent or limit further marketing of a product based on the results of these post-marketing programs or other information.

Other Regulatory Requirements. Products manufactured or distributed pursuant to FDA approvals are subject to continuing regulation by the FDA, including recordkeeping, annual product quality review, payment of program user fees and reporting requirements. Adverse event experience with the product must be reported to the FDA in a timely fashion and pharmacovigilance programs to proactively look for these adverse events are mandated by the FDA. Manufacturers and their subcontractors are required to register their establishments with the FDA and certain state agencies, and are subject to periodic unannounced inspections by the FDA and certain state agencies for compliance with ongoing regulatory requirements, including cGMPs, which impose certain procedural and documentation requirements upon us and our third-party manufacturers. Failure to comply with the statutory and regulatory requirements can subject a manufacturer to possible legal or regulatory action, such as suspension of manufacturing, seizure of product, injunctive action, additional reporting requirements and/or oversight by the agency, import alert or possible civil or criminal penalties. The FDA may also require us to recall a product from distribution or withdraw approval for that product.

The FDA closely regulates the post-approval marketing and promotion of pharmaceuticals, including standards and regulations for direct-to-consumer advertising, dissemination of off-label information, industry-sponsored scientific and educational activities and promotional activities involving the Internet, including certain social media activities. Further, if there are any modifications to the product, including changes in indications, labeling, or manufacturing processes or facilities, we may be required to submit and obtain FDA approval of a new or supplemental application, which may require us to develop additional data or conduct additional pre-clinical studies and clinical trials. Failure to comply with these requirements can result in adverse publicity, warning letters, corrective advertising and potential administrative, civil and

criminal penalties, as well as damages, fines, withdrawal of regulatory approval, the curtailment or restructuring of our operations, the exclusion from participation in federal and state healthcare programs, additional reporting requirements and/or oversight by the agency, and imprisonment, any of which could adversely affect our ability to sell our products or operate our business and also adversely affect our financial results.

Physicians may, in their independent medical judgment, prescribe legally available pharmaceuticals for uses that are not described in the product's labeling and that differ from those tested by us and approved by the FDA. Such off-label uses are common across medical specialties. Physicians may believe that such off-label uses are the best treatment for many patients in varied circumstances. The FDA does not regulate the behavior of physicians in their choice of treatments. The FDA does, however, impose stringent restrictions on manufacturers' communications regarding off-label use. Additionally, a significant number of pharmaceutical companies have been the target of inquiries and investigations by various U.S. federal and state regulatory, investigative, prosecutorial and administrative entities in connection with the promotion of products for off-label uses and other sales practices. These investigations have alleged violations of various U.S. federal and state laws and regulations, including claims asserting antitrust violations, violations of the Food, Drug and Cosmetic Act, false claims laws, the Prescription Drug Marketing Act, anti-kickback laws, and other alleged violations in connection with the promotion of products for unapproved uses, pricing and Medicare and/or Medicaid reimbursement. If our promotional activities, including any promotional activities that a contracted sales force may perform on our behalf, fail to comply with these regulations or guidelines, we may be subject to warnings from, or enforcement action by, these authorities. In addition, our failure to follow FDA rules and guidelines relating to promotion and advertising may cause the FDA to issue warning letters or untitled letters, suspend or withdraw an approved product from the market, require corrective advertising or a recall or institute fines or civil fines, additional reporting requirements and/or oversight or could result in disgorgement of money, operating restrictions, injunctions or criminal prosecution, any of which could harm our business.

Outside the United States, the ability of our partners and us to market a product is contingent upon obtaining marketing authorization from the appropriate regulatory authorities. The requirements governing marketing authorization, pricing and reimbursement vary widely from country to country and region to region.

Healthcare Fraud and Abuse Laws. As a pharmaceutical company, certain federal and state healthcare laws and regulations pertaining to fraud and abuse and patients' rights may be applicable to our business. We may be subject to various federal and state laws targeting fraud and abuse in the healthcare industry. For example, in the United States, there are federal and state anti-kickback laws that prohibit the payment or receipt of kickbacks, bribes or other remuneration intended to induce the purchase or recommendation of healthcare products and services or reward past purchases or recommendations. These laws are applicable to manufacturers of products regulated by the FDA, such as us, and pharmacies, hospitals, physicians and other potential purchasers of such products.

The federal Anti-Kickback Statute prohibits persons from knowingly and willfully soliciting, receiving, offering or paying remuneration, directly or indirectly, to induce either the referral of an individual, or the furnishing, recommending, or arranging for a good or service, for which payment may be made, in whole or in part, under a federal healthcare program, such as the Medicare and Medicaid programs. The term "remuneration" is defined as any remuneration, direct or indirect, overt or covert, in cash or in kind, and has been broadly interpreted to include anything of value, including for example, gifts, discounts, the furnishing of supplies or equipment, credit arrangements, payments of cash, waivers of payment, ownership interests and providing anything at less than its fair market value. Several courts have interpreted the statute's intent requirement to mean that if any one purpose of an arrangement involving remuneration is to induce referrals of federal healthcare covered business, the statute may have been violated, and enforcement will depend on the relevant facts and circumstances. The Patient Protection and Affordable Care Act of 2010, as amended by the Health Care and Education Reconciliation Act of 2010 (collectively, the "ACA"), among other things, amended the intent requirement of the federal Anti-Kickback Statute to state that a person or entity need not have actual knowledge of this statute or specific intent to violate it in order to have committed a violation. In addition, the ACA provides that the government may assert that a claim including items or services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the False Claims Act (discussed below) or the civil monetary penalties statute, which imposes penalties against any person who is determined to have presented or caused to be presented a claim to a federal health program that the person knows or should know is for an item or service that was not provided as claimed or is false or fraudulent, or to have offered improper inducements to federal health care program beneficiaries to select a particular provider or supplier. The federal Anti-Kickback Statute is broad, and despite a series of narrow statutory exceptions and regulatory safe harbors, prohibits many arrangements and practices that are lawful in businesses outside of the healthcare industry. Many states have also adopted laws similar to the federal Anti-Kickback Statute, some of which apply to the referral of patients for healthcare items or services reimbursed by any source, not only the Medicare and Medicaid programs, and do not contain identical safe harbors. In addition, where such activities involve foreign government officials, they may also potentially be subject to the Foreign Corrupt Practices Act. Because of the breadth of these laws and the narrowness of the statutory exceptions and

regulatory safe harbors available, it is possible that some of our business activities, including our activities with physician customers, pharmacies, and patients, as well as our activities pursuant to partnerships with other companies and pursuant to contracts with contract research organizations, could be subject to challenge under one or more of such laws.

The federal criminal and civil false claims laws, including the False Claims Act, which prohibits any person from knowingly presenting, or causing to be presented, a false claim for payment to the federal government or knowingly making, using or causing to be made or used a false record or statement material to a false or fraudulent claim to the federal government. A claim includes "any request or demand" for money or property presented to the U.S. government. In addition, the ACA specified that a claim including items or services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the False Claims Act. The False Claims Act has been the basis for numerous enforcement actions and settlements by pharmaceutical and other healthcare companies in connection with various alleged financial relationships with customers. In addition, a number of pharmaceutical manufacturers have reached substantial financial settlements in connection with allegedly causing false claims to be submitted because of the companies' marketing of products for unapproved, and thus non-reimbursable, uses. Certain marketing practices, including off-label promotion, may also violate false claims laws, as might violations of the federal physician self-referral laws, such as the Stark laws, which prohibit a physician from making a referral to certain designated health services with which the physician or the physician's family member has a financial interest and prohibit submission of a claim for reimbursement pursuant to the prohibited referral. The "qui tam" provisions of the False Claims Act allow a private individual to bring civil actions on behalf of the federal government alleging that the defendant has submitted a false claim to the federal government, and to share in any monetary recovery. In addition, various states have enacted similar fraud and abuse statutes or regulations, including, without limitation, false claims laws analogous to the False Claims Act that apply to items and services reimbursed under Medicaid and other state programs, or, in several states, apply regardless of the payor.

Separately, there are a number of other fraud and abuse laws that pharmaceutical manufacturers must be mindful of, particularly after a product candidate has been approved for marketing in the United States. For example, a federal criminal law enacted as part of, the Health Insurance Portability and Accountability Act of 1996 ("HIPAA") prohibits, among other things, knowingly and willfully executing a scheme to defraud any healthcare benefit program, including private third-party payors. The false statements statute prohibits knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false, fictitious or fraudulent statement in connection with the delivery of or payment for healthcare benefits, items or services. There are also federal and state consumer protection and unfair competition laws, which broadly regulate marketplace activities and activities that potentially harm consumers.

Healthcare Privacy and Security Laws. We may be subject to, or our marketing activities may be limited by, HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act of 2009 ("HITECH") and their respective implementing regulations, which established uniform standards for certain "covered entities" (certain healthcare providers, health plans and healthcare clearinghouses) governing the conduct of certain electronic healthcare transactions and protecting the security and privacy of protected health information. Among other things, HIPAA's privacy and security standards are directly applicable to "business associates" — independent contractors or agents of covered entities that create, receive, maintain or transmit protected health information in connection with providing a service for or on behalf of a covered entity, as well as their covered subcontractors. In addition to possible civil and criminal penalties for violations, HITECH created new tiers of civil monetary penalties, amended HIPAA to make civil and criminal penalties directly applicable to business associates, and gave state attorneys general authority to file civil actions for damages or injunctions in federal courts to enforce HIPAA and seek attorney's fees and costs associated with pursuing federal civil actions. State laws also govern the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways and may not have the same effect, thus complicating compliance efforts. Further, we are required to comply with international personal data protection laws and regulations, particularly as the result of our operations in Düsseldorf, Germany.

Privacy and Security Laws. We are subject to diverse laws and regulations relating to data privacy and security, including, in the United States, HIPAA and, in the EU and the European Economic Area ("EEA") the GDPR (Regulation 2016/679). New privacy rules are being enacted in the United States and globally, and existing ones are being expanded, updated and strengthened.

Effective May 25, 2018, the EU implemented the General Data Protection Regulation ("GDPR") a broad data protection framework that expands the scope of current EU data protection law to non-EU entities that process, or control the processing of, the personal information of EU subjects, including clinical trial data. The GDPR implements more stringent operational requirements than its predecessor legislation.

Further, the Court of Justice of the EU ruled in July 2020 that the Privacy Shield, used by thousands of companies to transfer data between the EU and United States, was invalid and could no longer be used. In September 2020, Switzerland

concluded that the Swiss-U.S. Privacy Shield Framework does not provide an adequate level of protection for data transfers from Switzerland to the United States. Alternative transfer mechanisms may be used, including the standard contractual clauses ("SCCs"), while the authorities interpret the decisions and scope of the invalidated Privacy Shield, but the SCCs have also been called into question in the same ruling that invalidated Privacy Shield.

Additionally, Brexit took effect in January 2020, which will lead to further legislative and regulatory changes. While the Data Protection Act of 2018, that "implements" and complements the GDPR achieved Royal Assent on May 23, 2018 and is now effective in the United Kingdom, it is still unclear whether transfer of data from the EEA to the United Kingdom will remain lawful in the long term under GDPR. With the expiry of the transition period on December 31, 2020, companies will have to comply with the GDPR and the GDPR as incorporated into United Kingdom national law, which has the ability to separately fine up to the greater of £17.5 million or 4% of global turnover. The relationship between the United Kingdom and the EU in relation to certain aspects of data protection law remains unclear, for example around how data can lawfully be transferred between each jurisdiction, which exposes us to further compliance risk. We may incur liabilities, expenses, costs, and other operational losses under GDPR and applicable EU Member States and the United Kingdom privacy laws in connection with any measures we take to comply with them.

Also, in June 2018, the State of California enacted the California Consumer Privacy Act of 2018 ("CCPA"), which became effective in January 2020. The CCPA establishes a privacy framework for covered businesses, including an expansive definition of personal information and data privacy rights for California residents. The CCPA includes a framework with potentially severe statutory damages and private rights of action. The CCPA requires covered companies to provide new disclosures to California consumers (as that word is broadly defined in the CCPA), provide such consumers new ways to opt-out of certain sales of personal information, and allow for a new cause of action for data breaches.

Further, California voters approved a new privacy law, the California Privacy Rights Act ("CPRA") in the November 3, 2020 election. Effective starting on January 1, 2023, the CPRA will significantly modify the CCPA, including by expanding consumers' rights with respect to certain sensitive personal information. The CPRA also creates a new state agency that will be vested with authority to implement and enforce the CCPA and the CPRA.

"Sunshine" and Marketing Disclosure Laws. There are an increasing number of federal and state "sunshine" laws that require pharmaceutical manufacturers to make reports to states on pricing and marketing information. Several states and local jurisdictions have enacted legislation requiring pharmaceutical companies to, among other things, establish marketing compliance programs, file periodic reports with the state, make periodic public disclosures on sales and marketing activities, register pharmaceutical sales representatives, and prohibiting certain other sales and marketing practices. In addition, a similar federal requirement, known as the Physician Payments Sunshine Act, requires manufacturers, including pharmaceutical manufacturers, to track and report annually to the federal government certain payments and other transfers of value made to physicians (defined to include doctors, dentists, optometrists, podiatrists and chiropractors), other healthcare professionals (such as physician assistants and nurse practitioners) and teaching hospitals and information regarding ownership or investment interests held by such physicians and their immediate family members. The federal government discloses the reported information on a publicly available website. Certain states, such as Massachusetts, also make the reported information publicly available. In addition, there are state and local laws that require pharmaceutical representatives to be licensed and comply with codes of conduct, transparency reporting, and other obligations. These laws may adversely affect our sales, marketing, and other activities with respect to our products in the United States by imposing administrative and compliance burdens on us. If we fail to track and report as required by these laws or otherwise comply with these laws, we could be subject to the penalty provisions of the pertinent state and federal authorities.

Government Price Reporting. For those marketed products which are covered in the United States by the Medicaid programs, we have various obligations, including government price reporting and rebate requirements, which generally require products be offered at substantial rebates/discounts to Medicaid and certain purchasers (including "covered entities" purchasing under the 340B Drug Discount Program). We are also required to discount such products to authorized users of the Federal Supply Schedule of the General Services Administration, under which additional laws and requirements apply. These programs require submission of pricing data and calculation of discounts and rebates pursuant to complex statutory formulas, as well as the entry into government procurement contracts governed by the Federal Acquisition Regulations, and the guidance governing such calculations is not always clear. Compliance with such requirements can require significant investment in personnel, systems and resources, but failure to properly calculate our prices, or offer required discounts or rebates could subject us to substantial penalties. One component of the rebate and discount calculations under the Medicaid and 340B programs, respectively, is the "additional rebate," a complex calculation which is based, in part, on the rate at which a branded drug price increases over time more than the rate of inflation (based on the CPI-U). This comparison is based on the baseline pricing data for the first full quarter of sales associated with a branded drug's NDA, and baseline data cannot generally be reset, even on transfer of the NDA to another manufacturer. This "additional rebate" calculation can, in

some cases where price increase has been relatively high versus the first quarter of sales of the NDA, result in Medicaid rebates up to 100 percent of a drug's "average manufacturer price" and 340B prices of one penny.

Penalties. Because of the breadth of these laws and the narrowness of available statutory exception and regulatory safe harbors, it is possible that some of our business activities in the United States could be subject to challenge under one or more of such laws. Moreover, state governmental agencies may propose or enact laws and regulations that extend or contradict federal requirements. If we or our operations are found to be in violation of any of the state or federal laws described above or any other governmental regulations that apply to us, we may be subject to penalties, including significant civil, criminal and administrative penalties, damages, fines, disgorgement, imprisonment, exclusion from participation in U.S. federal or state healthcare programs, additional reporting requirements and/or oversight, if subject to a corporate integrity agreement or similar agreement to resolve allegations of non-compliance with these laws, exclusion from participation in federal healthcare programs, contractual damages, reputational harm, diminished profits and future earnings, and the curtailment or restructuring of our operations. Any penalties, damages, fines, curtailment or restructuring of our operations could materially adversely affect our ability to operate our business and our financial results. Although compliance programs can mitigate the risk of investigation and prosecution for violations of these laws, the risks cannot be entirely eliminated. Any action against us for violation of these laws, even if we successfully defend against it, could cause us to incur significant legal expenses and divert our management's attention from the operation of our business. Moreover, achieving and sustaining compliance with applicable federal and state privacy, security, sunshine, government price reporting, and fraud laws may prove costly.

Coverage and Reimbursement. Sales of any marketed product, in particular for HEPLISAV-B, depend, in part, on the extent to which such product will be covered by third-party payors, such as federal, state, and foreign government healthcare programs, commercial insurance and managed healthcare organizations, and the level of reimbursement for such product by third-party payors. Decisions regarding the extent of coverage and amount of reimbursement to be provided are made on a plan-by-plan basis. These third-party payors are increasingly reducing coverage and reimbursement for medical products, drugs and services. In addition, the U.S. government, state legislatures and foreign governments have continued implementing cost-containment programs, including price controls, restrictions on coverage and reimbursement and requirements for substitution of generic products. Adoption of price controls and cost-containment measures, and adoption of more restrictive policies in jurisdictions with existing controls and measures, could further limit sales of any product. Decreases in third-party reimbursement for any marketed product or a decision by a third-party payor not to cover a market product could reduce physician usage and patient demand for the product and also have a material adverse effect on sales.

Impact of Healthcare Reform and Recent Public Scrutiny of Specialty Drug Pricing on Coverage, Reimbursement, and Pricing. In the United States and other potentially significant markets for our products, federal and state authorities as well as third-party payors are increasingly attempting to limit or regulate the price of medical products and services, particularly for new and innovative products and therapies, which has resulted in lower average net selling prices. Further, there is increased scrutiny of prescription drug pricing practices by federal and state lawmakers and enforcement authorities. In addition, there is an emphasis on managed healthcare in the United States, which will put additional pressure on product pricing, reimbursement and usage, which may adversely affect our future product sales and results of operations. These pressures can arise from rules and practices of managed care groups, judicial decisions and governmental laws and regulations related to Medicare, Medicaid and healthcare reform, pharmaceutical reimbursement policies and pricing in general.

The U.S. and some foreign jurisdictions are considering or have enacted a number of additional legislative and regulatory proposals to change the healthcare system in ways that could affect our ability to sell our products profitably. Among policy makers and payors in the United States and elsewhere, there is significant interest in promoting changes in healthcare systems with the stated goals of containing healthcare costs (including a number of proposals pertaining to prescription drugs, specifically), improving quality and/or expanding access. For example, in Massachusetts, the MassHealth program has requested permission from the federal government to use commercial tools, such as a closed formulary, to negotiate more favorable rebate agreements from drug manufactures. There also has been particular and increasing legislative and enforcement interest in the United States with respect to specialty drug pricing practices, particularly with respect to drugs that have been subject to relatively large price increases over relatively short time periods. Such interest has resulted in several recent U.S. Congressional inquiries and proposed and enacted federal and state legislation designed to, among other things, bring more transparency to drug pricing, review the relationship between pricing and manufacturer patient programs, reduce the cost of drugs under Medicare, and reform government program reimbursement methodologies for drugs. At the federal level, the Trump administration used several means to propose or implement drug pricing reform, including through federal budget proposals, executive orders and policy initiatives. For example, on July 24, 2020 and September 13, 2020, the Trump administration announced several executive orders related to prescription drug pricing that attempt to implement several of the administration's proposals. The FDA also concurrently released a final rule and guidance in September 2020, implementing a portion of the importation executive order providing pathways for states to build and submit importation plans for drugs from Canada. Further, on November 20, 2020, U.S. Department of Health and Human Services ("HHS") finalized a regulation removing safe harbor protection for price reductions from pharmaceutical manufacturers to plan sponsors under Part D, either directly or through pharmacy benefit managers, unless the price reduction is required by law.

The implementation of the rule has been delayed by the Biden administration from January 1, 2022 to January 1, 2023 in response to ongoing litigation. The rule also creates a new safe harbor for price reductions reflected at the point-of-sale, as well as a new safe harbor for certain fixed fee arrangements between pharmacy benefit managers and manufacturers, the implementation of which have also been delayed until January 1, 2023. On November 20, 2020, CMS issued an interim final rule implementing President Trump's Most Favored Nation executive order, which would tie Medicare Part B payments for certain physician-administered drugs to the lowest price paid in other economically advanced countries, effective January 1, 2021. As a result of litigation challenging the Most Favored Nation model, on December 27, 2021, CMS published a final rule that rescinded the Most Favored Nation model interim final rule. In July 2021, the Biden administration released an executive order, "Promoting Competition in the American Economy," with multiple provisions aimed at prescription drugs. In response to Biden's executive order, on September 9, 2021, HHS released a Comprehensive Plan for Addressing High Drug Prices that outlines principles for drug pricing reform and sets out a variety of potential legislative policies that Congress could pursue to advance these principles. No legislation or administrative actions have been finalized to implement these principles. In addition, Congress is considering drug pricing as part of other reform initiatives. At the state level, legislatures have increasingly passed legislation and implemented regulations designed to control pharmaceutical and biological product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, designed to encourage importation from other countries and bulk purchasing. For example, in California, effective January 1, 2019, drug companies must notify insurers and government regulators of certain price increases and provide an explanation of the reasons for such increases.

In the United States, the pharmaceutical industry has already been significantly affected by major legislative initiatives, including, for example, the ACA. The ACA, among other things, imposes a significant annual fee on companies that manufacture or import branded prescription drug products. It also contains substantial provisions intended to broaden access to health insurance, reduce or constrain the growth of healthcare spending, and impose additional health policy reforms, any or all of which may affect our business.

There remain judicial and Congressional challenges to certain aspects of the ACA, as well as recent efforts by the Trump administration to repeal or replace certain aspects of the ACA. Since January 2017, President Trump signed several Executive Orders and other directives designed to delay the implementation of certain provisions of the ACA or otherwise circumvent some of the requirements for health insurance mandated by the ACA. Concurrently, Congress considered legislation that would repeal or repeal and replace all or part of the ACA. While Congress has not passed comprehensive repeal legislation, several bills affecting the implementation of certain taxes under the ACA have been signed into law. For example, the Tax Cuts and Jobs Act of 2017 (the "Tax Act") includes a provision repealing, effective January 1, 2019, the tax-based shared responsibility payment imposed by the ACA on certain individuals who fail to maintain qualifying health coverage for all or part of a year that is commonly referred to as the "individual mandate". On June 17, 2021 the U.S. Supreme Court dismissed a challenge on procedural grounds that argued the ACA is unconstitutional in its entirety because the "individual mandate" was repealed by Congress. Thus, the ACA will remain in effect in its current form. Further, prior to the U.S. Supreme Court ruling, on January 28, 2021, President Biden issued an executive order to initiate a special enrollment period from February 15, 2021 through August 15, 2021 for purposes of obtaining health insurance coverage through the ACA marketplace. The executive order also instructs certain governmental agencies to review and reconsider their existing policies and rules that limit access to healthcare, including among others, reexamining Medicaid demonstration projects and waiver programs that include work requirements, and policies that create unnecessary barriers to obtaining access to health insurance coverage through Medicaid or the ACA. It is possible that the ACA will be subject to judicial or Congressional challenges in the future.

Other legislative changes have also been proposed and adopted since the ACA was enacted. For example, the Budget Control Act of 2011 resulted in aggregate reductions in Medicare payments to providers of up to two percent per fiscal year, starting in 2013 and, due to subsequent legislative amendments to the statute, will remain in effect through 2031 unless additional Congressional action is taken. However, COVID-19 relief support legislation suspended the 2% Medicare sequester from May 1, 2020 through March 31, 2022. Under current legislation, the actual reduction in Medicare payments will vary from 1% in 2022 to up to 3% in the final fiscal year of this sequester. In addition, the American Taxpayer Relief Act of 2012, among other things, reduced Medicare payments to several types of providers and increased the statute of limitations period for the government to recover overpayments to providers from three to five years. Such laws, and others that may affect our business that have been recently enacted or may in the future be enacted, may result in additional reductions in Medicare and other healthcare funding. Further, Congress is considering additional health reform measures.

MANUFACTURING

We rely on our facility in Düsseldorf, Germany and third parties to perform the multiple processes involved in manufacturing HEPLISAV-B and our product candidates, including the manufacturing of TLR agonists, antigens, and the formulation, fill and finish of the resultant products. As is common in our industry in light of FDA inspection and licensing

requirements for manufacturing sites, we have relied on a limited number of suppliers to produce products for clinical trials and conduct fill/finish operations. We also rely on a single supplier to produce our CpG 1018 adjuvant for HEPLISAV-B and for our collaborators, and have established an additional qualified supplier to produce CpG 1018 adjuvant for our collaboration partners. Switching suppliers, or bringing on additional suppliers, could be complicated and time consuming, but we generally seek to maintain inventory to help bridge any unexpected gap in supply. In order to help us successfully manufacture and commercialize HEPLISAV-B, we have secured long-term supply agreements with the key third-party suppliers and vendors for commercial supply of our component products and finished goods. We currently manufacture the HBsAg for HEPLISAV-B at our Dynavax GmbH facility.

COMMITMENT TO COMPLIANCE AND ENVIRONMENT

We are committed to conducting our business in compliance with all applicable legal and ethical standards. In addition, we are committed to helping to protect the environment.

Our Ethics and Compliance program includes our Code of Business Conduct and Ethics ("Code"), which sets forth our expectations of all Dynavax employees globally that they conduct their business activities in a legal and ethical manner. The Code can be found on our website under the header "Investors" and within that under the header "Corporate Governance Documents." We have a Chief Ethics and Compliance Officer, a Compliance Steering Committee and policies, procedures and training addressing specific aspects of our business, including advertising and promotion; engagements with healthcare providers; and regarding our business activities outside the United States to ensure they comply with the U.S. Foreign Corrupt Practices Act and all other applicable anti-corruption laws. We certify on an annual basis to having a comprehensive compliance program that meets the standards set forth under California law. This certification, which sets forth all of the elements of our healthcare compliance program, can be found on our web-site.

We also care about the environment. To that end, our headquarters is in a building certified as "Gold" level on the LEED Scorecard as set forth by the United States Green Building Committee. Additionally, we offer incentives to our employees to utilize public transit in order to reduce traffic congestion and pollution and there is a free shuttle from our building to public transportation. Access to our offices has been limited to essential workers since the beginning of the pandemic. We do not plan to have our headquarter-based employees return to our headquarters full-time once the pandemic subsides. This transition to a largely virtual environment further helps reduce congestion and pollution. Additionally, we have plans in 2022 to significantly reduce the size of our headquarters office space which will further reduce our carbon footprint. In addition, we have an active recycling program. We continue to consider other ways in which we can conduct our business in an environmentally friendly manner.

We have made, and will continue to make, expenditures for environmental compliance and protection. We do not expect that expenditures for compliance with environmental laws will have a material effect on our results of operations in the future.

Human Capital Resources

As of December 31, 2021, we had 311 employees, comprised of 201 employees in the U.S., including 96 members of our field sales team located throughout the U.S., as well as 110 employees in our office and manufacturing facility in Düsseldorf, Germany. Many of our employees hold advanced degrees, including Masters degrees and Pharm.D., Ph.D., M.D. or J.D. degrees. We consider the intellectual capital of our employees to be an essential driver of our business and key to our future prospects. None of our employees is subject to a collective bargaining agreement or represented by a trade or labor union. We consider our relations with our employees to be very good.

Retention

Our regrettable turnover rate for 2021 was 12.0% in the U.S. and less than 7.7% in Düsseldorf. As a vaccine-focused company, we face stiff competition to hire and retain our employees which is exacerbated by the current and intense global focus to develop and distribute a COVID-19 vaccine, as market participants in the COVID-19 space grow their businesses and seek to do so by hiring professionals with vaccine experience in particular. The average tenure among our employees, is 5.6 years in Düsseldorf and 2.6 years in the U.S.

Development

Attracting and retaining top talent is key to the achievement of our strategic goals. The development and engagement of our employees is also a top priority of the human resources team, and in 2021, an additional 28 leaders and key contributors completed a leadership development program.

In 2021 we offered a diversity and inclusion program called Awareness & Understanding in Action to our U.S.-based employees. This program consisted of five modules facilitated by an external Diversity, Equity and Inclusion ("DEI") consultant. Later in the year we implemented the following three global DEI Commitments:

- Fostering a culture where all employees are recognized and appreciated for the unique individuals they are and for their accomplishments in the workplace.
- Providing education to our employees on the negative effects of unconscious bias.
- Building and sustaining a team filled with a diversity of personal experiences, backgrounds, and perspectives.

In 2021 we also partnered with certain non-profit organizations committed to addressing the impact of poverty and inequality in our communities and we added two additional paid days for our employees to volunteer in their communities each year.

Response to the COVID-19 pandemic

In response to the COVID-19 pandemic, we moved to a virtual working model in the U.S. and through work-from-home and creative scheduling efforts, we continued to reduce the number of employees required to be onsite each day in our Düsseldorf manufacturing facility by approximately 50%. Also, in response to the pandemic we implemented a wellness mobile phone application for employees with free exercise, nutrition and other health related resources. We held several internal competitions among employees and rewarded employees for making healthy lifestyle choices. In the U.S. we implemented an additional mental health benefit providing greater access to resources and care for our employees and their family members.

Compensation

We also monitor our compensation programs closely and provide what we consider to be a very competitive mix of compensation and insurance benefits for all our employees. Each of our employees participates in our equity programs.

CORPORATE INFORMATION & AVAILABLE INFORMATION

Our principal executive offices are located at 2100 Powell Street, Suite 900, Emeryville, California, 94608. Our telephone number is (510) 848-5100. We make available, free of charge on our website located at www.dynavax.com, our annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and any amendments to those reports, as soon as reasonably practicable after filing such reports with the Securities and Exchange Commission (“SEC”). Alternatively, you may access these reports at the SEC’s website at www.sec.gov. The contents of our websites are not incorporated by reference into this Annual Report on Form 10-K or in any other report or document we file with the SEC, and any references to our websites are intended to be inactive textual references only.

ITEM 1A. RISK FACTORS

An investment in our common stock involves a high degree of risk. You should carefully consider the following risks and uncertainties, in addition to the other information contained in this Annual Report on Form 10-K, including our consolidated financial statements and related notes, before making an investment decision. The risks described below are not the only ones facing us. If any of the events described in the following risk factors occurs, our business, operating results and financial condition could be seriously harmed. This Annual Report on Form 10-K also contains forward-looking statements that involve risks and uncertainties. Our actual results could differ materially from those anticipated in the forward-looking statements as a result of factors that are described below and elsewhere in this Annual Report on Form 10-K.

Risks Related to our Business and Capital Requirements

HEPLISAV-B has been launched in the United States, and approved in the European Union, and there is significant competition in these marketplaces. Since this is our first marketed product, the timing of uptake and distribution efforts are unpredictable and there is a risk that we may not achieve and sustain commercial success for HEPLISAV-B.

We have established sales, marketing and distribution capabilities and commercialized HEPLISAV-B in the U.S. Successful commercialization of HEPLISAV-B in the U.S. or elsewhere will require significant resources and time and, while our personnel are experienced with respect to marketing of healthcare products, because HEPLISAV-B is our first marketed product, the potential uptake of the product in distribution and the timing for growth in sales, if any, is unpredictable and we may not be successful in commercializing HEPLISAV-B in the long term. Additionally, while we have received European approval for HEPLISAV-B and we entered a commercialization agreement for the marketing and distribution of HEPLISAV-B in Germany in May 2021, we have never launched a product in the European Union before and there can be no certainty that we will succeed in our European launch efforts. In particular, successful commercialization of HEPLISAV-B will require that we continue to negotiate and enter into contracts with wholesalers, distributors, group purchasing organizations, and other parties, and that we maintain those contractual relationships. There is a risk that we may fail to complete or maintain some or all of these important contracts on favorable terms or at all, or that in a potentially evolving reimbursement environment, our efforts may fail to overcome established competition at favorable pricing or at all.

We converted our contracted U.S. field sales team into full-time employees in the second quarter of 2019. Before then we had not previously employed an in-house field sales team, and thus have limited experience in overseeing and managing an employed salesforce. In 2021 we significantly expanded our field sales force. It will take time for this expanded team to generate significant sales momentum, if it does so at all. In addition, retention of capable sales personnel may be more difficult as we focus on a single product offering and we must retain our salesforce in order for HEPLISAV-B to establish a commercial presence.

Moreover, we expect that significant resources will need to be invested in order to successfully market, sell and distribute HEPLISAV-B for use with diabetes patients, one of our targeted patient populations. Although the Centers for Disease Control and Prevention ("CDC") and the CDC's Advisory Committee on Immunization Practices ("ACIP") recommend that all adults aged 19-59, including patients with diabetes, receive hepatitis B vaccinations, we are unable to predict how many of those patients may actually receive HEPLISAV-B.

In addition to the risks with employing and maintaining our own commercial capabilities and with contracting, other factors that may inhibit our efforts to successfully commercialize HEPLISAV-B include:

- whether we are able to recruit and retain adequate numbers of effective sales and marketing personnel;
- whether we are able to access key health care providers to discuss HEPLISAV-B;
- whether we can compete successfully as a relatively new entrant in established distribution channels for vaccine products; and
- whether we will maintain sufficient financial resources to cover the costs and expenses associated with creating and sustaining a capable sales and marketing organization and related commercial infrastructure.

If we are not successful, we may be required to collaborate or partner HEPLISAV-B with a third-party pharmaceutical or biotechnology company with existing products. To the extent we collaborate or partner, the financial value will be shared with another party and we will need to establish and maintain a successful collaboration arrangement, and we may not be able to enter into these arrangements on acceptable terms or in a timely manner in order to establish HEPLISAV-B in the market. To the extent that we enter into co-promotion or other arrangements, any revenues we receive will depend upon the efforts of third parties, which may not be successful and are only partially in our control. In that event, our product revenues may be lower than if we marketed and sold our products directly with the highest priority, and we may be required to reduce or eliminate much of our commercial infrastructure and personnel as a result of such collaboration or partnership.

We are continuing to closely monitor the impact of the COVID-19 global pandemic on our business and are taking proactive efforts to protect the health and safety of our workforce, patients and healthcare professionals, and to continue our business operations and advance our goal of bringing important new vaccines to patients as rapidly as possible. We have implemented measures to protect the health and safety of our workforce, including a mandatory work-from-home policy for employees who can perform their jobs offsite. In the conduct of our business activities, we are also taking actions to protect the safety of patients and healthcare professionals. Our field-based personnel previously paused in-person customer interactions in healthcare settings and generally used electronic communication, such as emails, phone calls and video

conferences. We may be required to do again so in the future. Many healthcare and contracting professionals at hospitals and other medical institutions with whom our field-based personnel interact are working a greater proportion of their working schedule from home and are facing additional demands on their time during the COVID-19 pandemic. The different quality of electronic interactions as compared with in-person interactions, as well as the reduced quantity of interactions during the COVID-19 pandemic, may reduce the effectiveness of our sales personnel, our customers' procurement activities, as well as those of our collaborators, which could negatively affect our product sales.

In addition, due to the ongoing COVID-19 global pandemic, most medical centers initially restricted access to their facilities and focused on providing care to only the most severely affected patients beginning in March 2020. As states began phasing out these restrictions, medical centers began operating under limited capacity and strict social distancing rules. The overall impact has generally resulted in significantly reduced utilization of all adult vaccines (other than COVID-19 vaccines) since the end of the first quarter of 2020, including a reduction in the utilization of HEPLISAV-B. This reduced utilization has significantly impacted sales and is likely to continue to impact us until restrictions affecting us are lifted and the U.S. returns to more normal conditions. There can be no assurance of the timing or likelihood for adult vaccine utilization rates to return to pre-pandemic levels.

Governments influence the price of medicinal products in the European Union through their pricing and reimbursement rules and control of national healthcare systems that fund a large part of the cost of those products to consumers. Even though we have been granted a marketing authorization in the European Union for HEPLISAV-B, we have yet to obtain reimbursements and pricing approval in any European Union member state. Some jurisdictions operate positive and negative list systems under which products may only be marketed once a reimbursement price has been agreed. To obtain reimbursement or pricing approval, some of these countries may require the completion of clinical trials that compare the cost-effectiveness of a particular product candidate to currently available therapies. Other European Union member states allow companies to fix their own prices for medicines, but monitor and control company profits. Any delay in being able to market our products in the European Union or elsewhere will adversely affect our business and financial condition.

If we, or our partners, are not successful in setting our marketing, pricing and reimbursement strategies, recruiting and maintaining effective sales and marketing personnel or building and maintaining the infrastructure to support commercial operations in the U.S. and elsewhere, we will have difficulty successfully commercializing HEPLISAV-B, which would adversely affect our business and financial condition.

Our business and operations have been, and may continue to be, adversely affected by the evolving and ongoing COVID-19 global pandemic.

Our business has been, and may continue to be, adversely affected by the effects of the COVID-19 virus and its variants, which was declared by the World Health Organization ("WHO") as a global pandemic. The COVID-19 pandemic has resulted in travel and other restrictions in order to reduce the spread of the disease. In response to these public health directives and orders, we have implemented work-from-home policies for all employees, except those that need to be at work in order to perform critical responsibilities.

The COVID-19 pandemic, and government measures taken in response, have had a significant impact, both direct and indirect, on businesses and commerce, as significant reductions in business-related activities have occurred, supply chains have been disrupted, and manufacturing and clinical development activities have been curtailed or suspended. In accordance with guidance issued by the Centers for Disease Control and Prevention, WHO and local authorities, beginning in March 2020, most of our global workforce transitioned to working remotely and has continued to do so since. The principal purchasers of HEPLISAV-B, including independent hospitals and clinics, integrated delivery networks, public health clinics and prisons, the Departments of Defense and Veterans Affairs and retail pharmacies, have all drastically curtailed their day-to-day activities and ceased allowing or significantly reduced access to their facilities for non-COVID-19 related business. Thus, our field sales and medical science employees have increased their use of telephone and web-based means to carry out their roles where necessary, which may not be as effective as being in-person.

The overall impact has generally resulted in significantly reduced utilization of all adult vaccines, (other than COVID-19 vaccines), including HEPLISAV-B, since the end of the first quarter of 2020. This shift has significantly and adversely impacted our sales of HEPLISAV-B and our business and operating results since March 2020 and continues to pose a headwind for our HEPLISAV-B business. This reduced HEPLISAV-B utilization is likely to continue to impact us until restrictions affecting us are lifted, and the U.S. returns to more normal conditions.

We also cannot predict to what extent the COVID-19 pandemic may continue to disrupt demand for HEPLISAV-B, but the overall magnitude of the disruption to our business will depend, in part, on the length and ongoing severity of the restrictions, and other limitations on our ability to conduct our business in the ordinary course. Utilization rates for adult vaccines (other than COVID-19 vaccines) are well below pre-pandemic levels. Prolonged disruptions would likely materially and negatively impact our business, operating results and financial condition.

If the effect of any quarantines, shelter-in-place, executive and similar government orders related to COVID-19 increase, they could impact personnel at our manufacturing facility in Germany and third-party manufacturing facilities in the United States or abroad. This could adversely affect our ability to maintain and distribute a consistent supply of HEPLISAV-B or CpG 1018 adjuvant sufficient to meet demand.

The spread of COVID-19, which has caused a broad impact globally, has resulted in changes to our business and operations which has impacted our business and operations and may materially affect us economically in the future. While the potential economic impact, and the duration of such impact, brought by the COVID-19 pandemic may be difficult to assess or predict, a widespread pandemic could also potentially result in significant disruption of global financial markets, reducing our ability to access capital, which could in the future negatively affect our liquidity. In addition, a recession or market correction resulting from the spread of COVID-19 could materially affect our business and the value of our common stock.

The COVID-19 pandemic continues to rapidly evolve, and new variants of the virus continue to emerge. While some vaccines have been recently approved, it is not clear whether, which, or to what extent these vaccines will protect against current or future variants of the virus. The extent to which the COVID-19 pandemic impacts our business, our future sales of HEPLISAV-B, sales of CpG 1018 adjuvant and our total revenue will depend on future developments that are highly uncertain and cannot be predicted with confidence, such as the ultimate geographic spread of the disease, the duration and severity of the outbreak including current and future variants, travel restrictions, quarantines, social distancing requirements and business closures in the United States and elsewhere, business disruptions and the effectiveness of actions taken in the U.S. and elsewhere to contain and treat the disease. Accordingly, we do not yet know the full extent of potential delays or impacts on our business, operations or the global economy as a whole. However, these impacts could continue to adversely impact our business, financial condition, results of operations and growth prospects.

In addition, to the extent the ongoing COVID-19 pandemic adversely affects our business and results of operations, it may also have the effect of heightening many of the other risks and uncertainties described elsewhere in this "Risk Factors" section.

As we continue to focus on the commercialization of our HEPLISAV-B vaccine and our CpG 1018 adjuvant, we may encounter difficulties in managing our commercial growth and expanding our operations successfully.

As our commercial operations expand, we expect that we will also need to manage additional relationships with various third parties, including sole source suppliers, distributors, wholesalers and hospital customers. Future growth will impose significant added responsibilities on our organization, in particular on management. Our future financial performance and our ability to successfully commercialize our HEPLISAV-B vaccine and CpG 1018 adjuvant, and to compete effectively will depend, in part, on our ability to manage any future growth effectively. To that end, we may not be able to manage our growth efforts effectively, and hire, train, retain and integrate additional management, administrative and sales and marketing personnel, or secure sufficient or timely supply from third party service and product providers, and our failure to accomplish any of these activities could prevent us from successfully growing or our company or maintaining the same level of commercial growth.

As we plan for broader commercialization of our HEPLISAV-B vaccine and for expanded capacity to manufacture our CpG 1018 adjuvant, our financial commitments to increase supply capacity might outpace actual demand for our products.

As we plan to scale up production capabilities for HEPLISAV-B as well as production capabilities for our CpG 1018 adjuvant, to support market share gains or potential vaccine collaborations in response to COVID-19 and other initiatives, we have been, and in the future will be, required to make significant financial commitments to reserve manufacturing capacity at our contract manufacturing organizations ("CMOs"). Under ordinary circumstances we would make these commitments close in time and with some level of certainty that we have customers making similar commitments to us. Because of long lead times on manufacturing, uncertainty about who will ultimately buy adjuvant from us and in what quantities, if any, as well as the need to book manufacturing capacity in advance, the financial commitments we make to our CMOs to support

manufacturing may not be recovered in its entirety, or at all, if our collaborators or customers do not ultimately purchase from us. Capacity reservation fees are generally not recoverable if we do not use the capacity we have reserved as a result of lower than expected demand, or otherwise. As a result, we could end up making financial commitments that we never recover if demand for the adjuvant or any other product does not materialize in the volumes we are expecting or at all.

As we continue to grow as a commercial organization and enter into supply agreements with customers, those supply agreements will have obligations to deliver product that we are reliant upon third parties to manufacture on our behalf.

As our commercial business begins to expand in connection with commercial sales of HEPLISAV-B and CpG 1018 adjuvant, the contracts we enter into with our customers will generally carry delivery obligations that require us to deliver product in certain quantities and meet certain quality thresholds, among other things, all within specified timeframes. If, for any reason, whether due to reliance on third-party manufacturers or otherwise, we are unable to deliver timely, compliant products to our customers in quantities that meet our contractual obligations, we could be subject to lost revenue, contractual penalties, suits for damages, harm to our reputation or other problems that could materially and adversely affect our business.

Our financial results may vary significantly from quarter to quarter or may fall below the expectations of investors or securities analysts, each of which may adversely affect our stock price.

A substantial portion of our revenue for the foreseeable future may depend on sales of CpG 1018 adjuvant, which are difficult to predict. For example, as of December 31, 2021, we received advanced payments from certain of our customers to purchase specified quantities of CpG 1018 adjuvant which were recorded as deferred revenue until we deliver the adjuvant and meet all criteria to recognize revenue. In accordance with our stated revenue policy, we expect to record revenue for these contracts upon meeting all of the criteria for revenue recognition under Accounting Standards Codification 606, which includes, among other criteria, the transfer of control for CpG 1018 adjuvant to our customer. The occurrence and timing of such transfer of control can be difficult to predict, and the recognition of revenue can vary widely depending on timing of product deliveries and satisfaction of other obligations. We expect that our visibility into future revenue relating to sales of CpG 1018 adjuvant, including volumes, prices and timing, will continue to be limited and could result in significant, unexpected fluctuations in our quarterly and annual operating results.

Numerous factors, many of which are outside our control, may cause or contribute to significant fluctuations in our quarterly and annual operating results. For example, during the year ended December 31, 2021, sales of CpG 1018 accounted for 85% of our overall revenue, and one CpG 1018 customer accounted for 42% of our revenue. If orders from our top customers or the number of CpG 1018 collaborations are reduced or discontinued, our revenue in future periods may materially decrease. Fluctuations in our operating results may make financial planning and forecasting difficult. In addition, these fluctuations may result in unanticipated decreases in our available cash, which could negatively affect our business and prospects. Similarly, our revenue or operating expenses in one period may be disproportionately higher or lower relative to the others. Accordingly, comparing our operating results on a period-to-period basis may not be meaningful, and investors should not rely on any particular past results as an indication of our future performance. If such fluctuations occur or if our operating results deviate from our expectations or the expectations of investors or securities analysts, our stock price may be adversely affected.

We rely on our facility in Düsseldorf, Germany and third parties to supply materials or perform processes necessary to manufacture our products and our product candidates. We rely on a limited number of suppliers to produce the oligonucleotides we require for development and commercialization. Additionally, we have limited experience in manufacturing our products or product candidates in commercial quantities. With respect to HEPLISAV-B, we use a pre-filled syringe presentation of the vaccine and our ability to meet future demand will depend on our ability to manufacture or have manufactured sufficient supply in this presentation.

We rely on our facility in Düsseldorf and third parties to perform the multiple processes involved in manufacturing HEPLISAV-B surface antigens, the combination of the oligonucleotide and the antigens, and formulation, fill and finish. The FDA approved our pre-filled presentation of HEPLISAV-B in 2018 and we expect such presentation will be the sole presentation for HEPLISAV-B going forward. We have limited experience in manufacturing and supplying this presentation and rely on a contract manufacturer to do so. Our contract manufacturer is the only approved provider that we have, and there can be no assurance that we or they can successfully manufacture sufficient quantities of pre-filled syringes in compliance with good manufacturing practice ("GMP") in order to meet market demand.

Historically, we have also relied on a limited number of suppliers to produce oligonucleotides for clinical trials and a single supplier to produce (i) our CpG 1018 adjuvant for HEPLISAV-B and for our collaborators and (ii) our pre-filled

syringe presentation. Recently, we qualified a second supplier to manufacture CpG 1018 adjuvant, but have a limited operating relationship with them. To date, we have manufactured only small quantities of oligonucleotides ourselves for development purposes. If we were unable to maintain our existing suppliers for CpG 1018 adjuvant, we would have to establish an alternate qualified manufacturing capability ourselves, which would result in significant additional operating costs and delays in manufacturing HEPLISAV-B, or CpG 1018 adjuvant, and developing and commercializing our and our collaborators' product candidates. We or other third parties may not be able to produce product at a cost, quantity and quality that are available from our current third-party suppliers, or at all.

In countries outside of the U.S., we may not be able to comply with ongoing and comparable foreign regulations, and our manufacturing process may be subject to delays, disruptions or quality control/quality assurance problems. Noncompliance with these regulations or other problems with our manufacturing process may limit or disrupt the commercialization of our products or our and our collaborators' product candidates and could result in significant expense.

We have entered into collaborative relationships to develop vaccines utilizing our CpG 1018 adjuvant, including collaborations to develop vaccines for COVID-19. These collaborations may not be successful. If the combination of patents, trade secrets and other proprietary rights that we rely on to protect our intellectual property rights in CpG 1018 adjuvant or otherwise are inadequate, we may be unable to realize recurring commercial benefit from the development of any vaccines containing CpG 1018 adjuvant.

As part of our business, we are working to develop our CpG 1018 adjuvant as a premier vaccine adjuvant through research collaborations and partnerships. Current collaborations are focused on adjuvanted vaccines for COVID-19, plague, Tdap, seasonal influenza, universal influenza and shingles. There are risks and uncertainties inherent in vaccine research and development, including the timing of completing vaccine development, the results of clinical trials, whether a vaccine will be approved for use, the extent of competition, government actions and whether a vaccine can be successfully manufactured and commercialized. As a result, these collaborative efforts may not be as successful as we expect, or at all.

In addition, our collaborators have primary responsibility for the development, conduct of clinical trials, and for seeking and obtaining regulatory approval of potential vaccines, including any potential vaccine for COVID-19 containing our adjuvant. We have limited or no control over our collaborators' decisions, including the amount and timing of resources that any of these collaborators will dedicate to such activities. Our collaborators may not purchase as much adjuvant as we anticipate, and they may delay placing orders or delay taking certain deliveries under certain circumstances which can affect our revenue recognition. If a collaborator fails to conduct collaborative activities successfully, the development and commercialization of a vaccine could be delayed, and may not occur at all. For example, as of December 31, 2021, only two of our collaborators have received emergency use authorization from an applicable regulatory authority for any vaccine for COVID-19 containing our adjuvant. We have historically relied on a single supplier to produce our CpG 1018 adjuvant, and only recently have qualified an alternate supplier to produce the adjuvant with whom we have a limited operating relationship. If we were unable to maintain our existing suppliers for the adjuvant, we would have to establish and maintain an alternate qualified manufacturing capability, which would result in significant additional operating costs and delays in developing and commercializing any potential adjuvanted vaccines by our third-party collaborators. We or other third parties may not be able to produce sufficient adjuvant at a cost, quantity and quality similar to that available from our current third-party suppliers, or at all, and even if we are successful in adding an additional supplier, there is no guarantee such supplier will be able to manufacture compliant supplemental quantities sufficient to support commercial demand, to the extent it materializes, and in the timeframes required.

Our adjuvant has no composition of matter patent protection. We have filed patent applications claiming compositions and methods of use of CpG 1018 adjuvant for COVID-19 and other vaccines. Such patents may or may not be allowed. In addition, we rely on trade secret protection and confidentiality and other agreements to protect our interests in proprietary know-how related to CpG 1018 adjuvant. If we are unable to adequately obtain or enforce our proprietary rights relating to CpG 1018 adjuvant, we may be unable to realize recurring commercial benefit from the development of a vaccine containing CpG 1018 adjuvant, and we may not have the ability to prevent others from developing or commercializing a vaccine containing the adjuvant. Disputes or litigation may also arise with our collaborators (with us and/or with one or more third parties), including disputes over ownership rights to intellectual property, know-how or technologies developed with our collaborators.

Furthermore, restrictive government actions related to potential waivers of intellectual property rights in the case of national emergencies or in other circumstances, such as imposition of compulsory licenses related to COVID-19 vaccines, as well as other regulatory initiatives, may result in a general weakening of our or our collaborators' intellectual property protection or otherwise diminish or eliminate our or our collaborators' ability to realize any commercial benefit from the

development of a COVID-19 vaccine containing CpG 1018. This may, in turn, adversely impact the demand for CpG 1018, which would have a material adverse effect on our business, results of operations, and financial condition.

We face uncertainty regarding coverage, pricing and reimbursement and the practices of third-party payors, which may make it difficult or impossible to sell certain of our products or product candidates on commercially reasonable terms.

In both domestic and foreign markets, our ability to achieve profitability will depend in part on the negotiation of a favorable price, as well as the availability of coverage and adequate reimbursement, from third-party payors, in particular for HEPLISAV-B, where existing products are already marketed. In the U.S., pricing for hepatitis B vaccines is currently stable and reimbursement is favorable as we believe private and public payors recognize the value of prophylaxis in this setting given the high costs of potential morbidity and mortality, and we have achieved coverage with most third-party payors. However, there is a risk that some payors may limit coverage to specific products on an approved list, also known as a formulary, which might not include HEPLISAV-B. Thus, there can be no assurance that HEPLISAV-B will achieve and sustain stable pricing and favorable reimbursement. Even if favorable coverage and reimbursement status is attained for one or more products for which we or our collaborators receive regulatory approval, less favorable coverage policies and reimbursement rates may be implemented in the future. Our ability to successfully obtain and retain market share and achieve and sustain profitability will be significantly dependent on the market's acceptance of a price for HEPLSIAV-B sufficient to achieve profitability, and future acceptance of such pricing.

Third-party payors are increasingly challenging the price and cost-effectiveness of medical products and services, and pricing, as well as coverage and reimbursement decisions, may not allow our future products to compete effectively with existing competitive products. Because we intend to offer products, if approved, that involve new technologies and new approaches to treating disease, the willingness of third-party payors to reimburse for our products is uncertain. We will have to charge a price for our products that is sufficient to enable us to recover our considerable investment in product development and our operating costs. Further, coverage policies and third-party reimbursement rates may change at any time. Therefore, even if favorable coverage and reimbursement status is attained, less favorable coverage policies and reimbursement rates may be implemented in the future. Adequate third-party payor reimbursement may not be available to enable us to maintain price levels sufficient to achieve profitability, and such unavailability could harm our future prospects and reduce our stock price.

We have applied for, and in some cases have received, grants to help fund the scale-up of CpG 1018 production, and such grants, if and when received, may involve pricing or other restrictions.

In order to help fund potential scale-up of production of CpG 1018 adjuvant that may be required in the event that our CpG 1018 adjuvant is included in any approved and commercially-available novel vaccine, whether a COVID-19 vaccine or otherwise, we have applied for, and in some cases have received grants from various charitable and philanthropic organizations. We may seek such grants in the future. These grants and others, if and when received, may come with certain pricing requirements, global access requirements or reporting or other covenants to ensure that any funded product is made available by us worldwide and on a nondiscriminatory basis. Such covenants may limit the price we can charge for any funded product and may involve a license to use technology we own that is included in the funded products if we do not comply. Such price limitations or licenses, if invoked, could serve to limit the prices we charge, or our control over the manufacturing and distribution of grant-funded products. Failure to agree with such requirements, may result in us not receiving some or all of the grant.

We are subject to ongoing FDA and EMA post-marketing obligations concerning HEPLISAV-B, which may result in significant additional expense, and we may be subject to penalties if we fail to comply with regulatory requirements or experience unanticipated regulatory issues with HEPLISAV-B.

Our HEPLISAV-B regulatory approval in the United States is subject to certain post-marketing obligations and commitments to the FDA. For example, we were required to conduct an observational comparative study of HEPLISAV-B to Engerix-B to assess occurrence of acute myocardial infarction, or AMI. This study was initiated in August 2018, concluded in November 2020 and the final study report has been submitted to the FDA. We are also committed to conducting an observational surveillance study to evaluate the incidence of new onset immune-mediated diseases, herpes zoster and anaphylaxis; and we are required to establish a pregnancy registry to provide information on outcomes following pregnancy exposure to HEPLISAV-B. These studies will require significant effort and resources, and failure to timely conduct and/or complete these studies to the satisfaction of the FDA could result in withdrawal of our BLA approval, which would have a material adverse effect on our business, results of operations, financial condition and prospects. The results of post-marketing studies may also result in additional warnings or precautions for the HEPLISAV-B label or expose additional safety concerns

that may result in product liability and withdrawal of the product from the market, any of which would have a material adverse effect on our business, results of operations, financial condition and prospects.

Similar post-marketing obligations and commitments exist in the European Union. For example, we are required to submit periodic safety update reports to the EMA and to keep an up to date risk management plan that takes into account new information that may lead to a significant change in the risk/benefit profile of HEPISLAV-B. Non-compliance with European Union requirements regarding safety monitoring or pharmacovigilance can result in significant financial penalties.

In addition, the manufacturing processes, labelling, packaging, distribution, adverse event reporting, storage, advertising, promotion and recordkeeping for HEPLISAV-B are subject to extensive and ongoing regulatory requirements in the United States and the European Union. These requirements include submissions of safety and other post-marketing information and reports, registration, as well as continued compliance with current good manufacturing practices ("cGMP"), good clinical practices ("GCP"), ICH guidelines, and good laboratory practices ("GLP"). If we are not able to meet and maintain regulatory compliance, we may lose marketing approval and be required to withdraw our product. Withdrawal of our product would have a material adverse effect on our business.

If HEPLISAV-B or any products we develop are not accepted by the market or if regulatory agencies limit our labeling indications, require labeling content that diminishes market uptake of HEPLISAV-B or any other products we develop, or limit our marketing claims, we may be unable to generate significant revenues, if any.

Even if we obtain regulatory approval for our product candidates, such as the U.S. and European approvals of HEPLISAV-B and are able to commercialize them as we have with HEPLISAV-B, our products may not gain market acceptance among physicians, patients, healthcare payors and the medical community.

The degree of market acceptance of HEPLISAV-B and any of our future approved products will depend upon a number of factors, including:

- the indication for which the product is approved and its approved labeling;
- the presence of other competing approved therapies;
- the potential advantages of the product over existing and future treatment methods;
- the relative convenience and ease of administration of the product;
- the strength of our sales, marketing and distribution support;
- the price and cost-effectiveness of the product; and
- third-party coverage and adequate reimbursement and the willingness of patients to pay out-of-pocket in the absence of sufficient reimbursement by third-party payors.

The FDA or other regulatory agencies could limit the labeling indication for which our product candidates may be marketed or could otherwise limit marketing efforts for our products. If we are unable to achieve approval or successfully market any of our product candidates, or marketing efforts are restricted by regulatory limits, our ability to generate revenues could be significantly impaired.

Many of our competitors have greater financial resources and expertise than we do. If we are unable to successfully compete with existing or potential competitors as a result of these disadvantages, we may be unable to generate sufficient, or any, revenues and our business will be harmed.

We compete with pharmaceutical companies, biotechnology companies, academic institutions and research organizations, in developing and marketing vaccines and adjuvants. For example, HEPLISAV-B competes in the U.S. with established hepatitis B vaccines marketed by Merck and GlaxoSmithKline plc ("GSK") and, if commercialized outside the U.S., with vaccines from those companies as well as several additional established pharmaceutical companies who market abroad. There are also modified schedules of conventional hepatitis B vaccines for limited age ranges that are approved in the European Union and United States. In addition, HEPLISAV-B competes against Twinrix, a bivalent vaccine marketed by GSK for protection against hepatitis B and hepatitis A. A three-dose HBV vaccine manufactured by VBI Vaccines Inc. ("VBI") is approved in Israel and U.S.

We are also in competition with companies developing vaccines and vaccine adjuvants, generally including, among others, GSK, Pfizer, Inc., Sanofi S.A., Merck, Novartis International AG, Agenus, Inc., Emergent BioSolutions, Inc., Novavax, Inc., Medicago Inc., Valneva, AstraZeneca plc, Moderna, Inc., Johnson & Johnson and VBI. We will likely compete with several of these companies in the hepatitis space, Tdap space, shingles space and spaces occupied by any other product candidates we ultimately choose to advance through our pipeline in the future.

Products in our clinical pipeline, if approved, will also face competition from competitors who have competing clinical programs or already approved products. Existing and potential competitors or other market participants may also compete with us for qualified commercial, scientific and management personnel, as well as for technology that would otherwise be advantageous to our business. Our success in developing marketable products and achieving a competitive position will depend, in part, on our ability to attract and retain qualified personnel in the near-term, particularly with respect to HEPLISAV-B commercialization. If we do not succeed in attracting new personnel and retaining and motivating existing personnel, our operations may suffer and we may be unable to obtain financing as needed, enter into collaborative arrangements, sell our product candidates or generate revenues.

Despite recent profitability, we have incurred annual net losses in each year since our inception and anticipate that we could continue to incur significant losses for the foreseeable future unless we can successfully commercialize HEPLISAV-B and/or continue to sell significant quantities of our CpG 1018 adjuvant, and if we are unable to sustain profitability, the market value of our common stock will likely decline.

We have generated limited revenue from the sale of products and, prior to January 1, 2021, have incurred losses in each year since we commenced operations in 1996. Our net income for the year ended December 31, 2021 was $76.7 million compared to net loss of $75.2 million for the year ended December 31, 2020. As of December 31, 2021, we had an accumulated deficit of $1.2 billion.

With our investment in the launch and commercialization of HEPLISAV-B in the U.S., we have in the past, and could in the future, incur operating losses. Our expenses have increased substantially as we established and maintain our HEPLISAV-B commercial infrastructure, including investments in internal infrastructure to support our field sales force and investments in manufacturing and supply chain commitments to maintain commercial supply of HEPLISAV-B. While new sales of CpG 1018 adjuvant have generated significant revenue during the pandemic, there is no guarantee that such revenues will be sustainable in the long term. The timing for uptake of our products in the U.S. and abroad may further affect costs or losses related to commercialization. Due to the numerous risks and uncertainties associated with developing and commercializing vaccine products or other products we may choose to offer in the future, we are unable to predict the extent of any future losses or when, if ever, we will become profitable on an annual basis, or, that if we are able to reach consistent profitability that it will be sustainable for any period of time.

Until we are able to generate significant revenues or achieve profitability through product sales on a consistent basis, we may require substantial additional capital to finance our operations.

As of December 31, 2021, we had $546.0 million in cash, cash equivalents and marketable securities. Prior to January 1, 2021, we incurred net losses in each year since our inception. For the year ended December 31, 2021, we had net income of $76.7 million. As of December 31, 2021, we had an accumulated deficit of $1.2 billion. We cannot be certain that sales of our products, and the revenue from our other activities are sustainable and past results are not a reliable indicator of future performance. Further, we expect to continue to incur substantial expenses as we continue to invest in the commercialization and development of HEPLISAV-B and our CpG 1018 adjuvant, clinical trials for our pipeline candidates, and other development. If we cannot generate a sufficient amount of revenue from product sales, we will need to finance our operations through strategic alliance and licensing arrangements and/or future public or private debt and equity financings. Raising additional funds through the issuance of equity or debt securities could result in dilution to our existing stockholders, increased fixed payment obligations, or both. In addition, these securities may have rights senior to those of our common stock and could include covenants that would restrict our operations.

Our ability to raise additional capital in the equity and debt markets, should we choose to do so, is dependent on a number of factors, including, but not limited to, the market demand for our common stock, which itself is subject to a number of development and business risks and uncertainties, our creditworthiness and the uncertainty that we would be able to raise such additional capital at a price or on terms that are favorable to us. In addition, our ability to raise additional funds may be adversely impacted by deteriorating global economic conditions and the recent disruptions to and volatility in the credit and financial markets in the United States and worldwide resulting from the ongoing COVID-19 pandemic or otherwise. Adequate financing may not be available to us on acceptable terms, or at all. If adequate funds are not available when needed,

we may need to significantly reduce our operations while we seek strategic alternatives, which could have an adverse impact on our ability to achieve our intended business objectives.

Regulatory authorities may require more clinical trials for our product candidates than we currently expect or are conducting before granting regulatory approval, if regulatory approval is granted at all. Our clinical trials may be extended which may lead to substantial delays in the regulatory approval process for our product candidates and may impair our ability to generate revenues.

Our registration and commercial timelines depend on further discussions with regulatory agencies and requirements and any requests that they may make for additional data or completion of additional clinical trials. Any such requirements or requests could:

- adversely affect our ability to timely and successfully commercialize or market these product candidates;
- result in significant additional costs;
- potentially diminish any competitive advantages for those products;
- potentially limit the markets for those products;
- adversely affect our ability to enter into collaborations or receive milestone payments or royalties from potential collaborators;
- cause us to abandon the development of the affected product candidate; or
- limit our ability to obtain additional financing on acceptable terms, if at all.

We may develop, seek regulatory approval for and market HEPLISAV-B or any other product candidates outside of the U.S. and Europe, requiring a significant commitment of resources. Failure to successfully manage our international operations could result in significant unanticipated costs and delays in regulatory approval or commercialization of our products or product candidates.

We may seek to introduce HEPLISAV-B, or any other product candidates we may develop, to various additional markets outside of the U.S. and Europe. Developing, seeking regulatory approval for and marketing our product candidates outside of the U.S. could impose substantial costs, as well as burdens on our personnel resources, in addition to potential diversion of management's attention from domestic operations. International operations are subject to risk, including:

- the difficulty of managing geographically distant operations, including recruiting and retaining qualified employees, locating adequate facilities and establishing useful business support relationships in the local community;
- compliance with varying international regulatory requirements, laws and treaties;
- securing international distribution, marketing and sales capabilities upon favorable terms;
- adequate protection of our intellectual property rights;
- obtaining regulatory and pricing approvals at a level sufficient to justify commercialization;
- legal uncertainties and potential timing delays associated with tariffs, export licenses and other trade barriers;
- foreign tax compliance and diverse tax consequences;
- the fluctuation of conversion rates between foreign currencies and the U.S. dollar; and
- regional and geopolitical risks.

In the event that we determine to pursue commercialization of HEPLISAV-B outside the United States and the European Union, our opportunity will depend upon our receiving regulatory approval, which can be costly and time consuming, and there is a risk that one or more regulatory bodies may require that we conduct additional clinical trials and/or take other measures which will take time and require that we incur significant additional expense. In addition, there is the risk that we may not receive approval in one or more jurisdictions, even if we undertake these efforts.

The results of clinical trials conducted to support regulatory approval in one or more jurisdictions, and any failure or delay in obtaining regulatory approval in one or more jurisdictions, may have a negative effect on the regulatory approval

process in other jurisdictions, including our regulatory approval in the United States. If we are unable to successfully manage our international operations, we may incur significant unanticipated costs and delays in regulatory approval or commercialization of our product candidates, which would impair our ability to generate revenues.

Clinical trials for our commercial product and product candidates are expensive and time consuming, may take longer than we expect or may not be completed at all, and have uncertain outcomes.

Clinical trials, including post-marketing studies, to generate sufficient data to meet FDA (and other regulatory agency) requirements are expensive and time consuming, may take more time to complete than expected or may not be completed, and may not have favorable outcomes if they are completed. In addition, results from smaller, earlier stage clinical studies may not be representative of larger, controlled clinical trials that would be required in order to obtain regulatory approval of a product candidate.

Each of our clinical trials requires the investment of substantial planning, expense and time and the timing of the commencement, continuation and completion of these clinical trials may be subject to significant delays relating to various causes, including scheduling conflicts with participating clinicians and clinical institutions, difficulties in identifying and enrolling participants who meet trial eligibility criteria, failure of participants to complete the clinical trial, delay or failure to obtain Institutional Review Board ("IRB") or regulatory approval to conduct a clinical trial at a prospective site, unexpected adverse events and shortages of available drug supply. Participant enrollment is a function of many factors, including the size of the relevant population, the proximity of participants to clinical sites, the eligibility criteria for the trial, the existence of competing clinical trials and the availability of alternative or new treatments.

As a biopharmaceutical company, we engage clinical research organizations ("CROs") to conduct clinical studies, and failure by us or our CROs to conduct a clinical study in accordance with GCP standards and other applicable regulatory requirements could result in disqualification of the applicable clinical trial from consideration in support of approval of a potential product.

We are responsible for conducting our clinical trials consistent with GCP standards and for oversight of our vendors to ensure that they comply with such standards. We depend on medical institutions and CROs to conduct our clinical trials in compliance with GCP. To the extent that we or they fail to comply with GCP standards, fail to enroll participants for our clinical trials, or are delayed for a significant time in the execution of our trials, including achieving full enrollment, we may be affected by increased costs, program delays or both, which may harm our business.

Clinical trials must be conducted in accordance with FDA or other applicable foreign government guidelines and are subject to oversight by the FDA, other foreign governmental agencies and IRBs at the medical institutions where the clinical trials are conducted. In addition, clinical trials must be conducted with supplies of our product candidates produced under GMP and other requirements in foreign countries, and may require large numbers of participants.

In addition, we obtain guidance from regulatory authorities on certain aspects of our clinical development activities and seek to comply with written guidelines provided by the authorities. These discussions and written guidelines are not binding obligations on the part of the regulatory authorities and the regulatory authorities may require additional patient data or studies to be conducted. Regulatory authorities may revise or retract previous guidance during the course of a clinical trial or after completion of the trial. The authorities may also disqualify a clinical trial from consideration in support of approval of a potential product if they deem the guidelines have not been met. The FDA or foreign regulatory agencies may determine our clinical trials or other data regarding safety, efficacy or consistency of manufacture or compliance with GMP regulations are insufficient for regulatory approval.

The FDA or other foreign regulatory agencies or we ourselves could delay, suspend or halt our clinical trials of a product candidate for numerous reasons, including with respect to our product candidates and those of our partners in combination agent studies:

- deficiencies in the trial design;
- deficiencies in the conduct of the clinical trial including failure to conduct the clinical trial in accordance with regulatory requirements or clinical protocols;
- deficiencies in the clinical trial operations or trial sites resulting in the imposition of a clinical hold;
- a product candidate may have unforeseen adverse side effects, including fatalities, or a determination may be made that a clinical trial presents unacceptable health risks;

- the time required to determine whether a product candidate is effective may be longer than expected;
- fatalities or other adverse events arising during a clinical trial that may not be related to clinical trial treatments;
- a product candidate or combination study may appear to be no more effective than current therapies;
- the quality or stability of a product candidate may fail to conform to acceptable standards;
- the inability to produce or obtain sufficient quantities of a product candidate to complete the trials;
- our inability to reach agreement on acceptable terms with prospective CROs and trial sites, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and trial sites;
- our inability to obtain IRB approval to conduct a clinical trial at a prospective site;
- the inability to obtain regulatory approval to conduct a clinical trial;
- lack of adequate funding to continue a clinical trial, including the occurrence of unforeseen costs due to enrollment delays, requirements to conduct additional trials and studies and increased expenses associated with the services of our CROs and other third parties;
- the inability to recruit and enroll individuals to participate in clinical trials for reasons including competition from other clinical trial programs for the same or similar indications; or
- the inability to retain participants who have initiated a clinical trial but may withdraw due to side effects from the therapy, lack of efficacy or personal issues, or who are otherwise unavailable for further follow-up.

In addition, we may experience significant setbacks in advanced clinical trials, even after promising results in earlier trials, such as unexpected adverse events that occur when our product candidates are combined with other therapies and drugs or given to larger patient populations, which often occur in later-stage clinical trials, or less favorable clinical outcomes. Moreover, clinical results are frequently susceptible to varying interpretations that may delay, limit or prevent regulatory approvals.

Negative or inconclusive results or adverse medical events, including participant fatalities that may be attributable to our product candidates, during a clinical trial may necessitate that it be redesigned, repeated or terminated. Further, some of our clinical trials may be overseen by a Data Safety Monitoring Board ("DSMB"), and the DSMB may determine to delay or suspend one or more of these trials due to safety or futility findings based on events occurring during a clinical trial. Any such delay, suspension, termination or request to repeat or redesign a trial could increase our costs and prevent or significantly delay our ability to commercialize our product candidates. Even if we complete all such activities without issue, final results may not actually support approval of a particular product candidate.

HEPLISAV-B and most of our earlier stage programs rely on oligonucleotide TLR agonists. In the event of serious adverse event data relating to TLR agonists we may be required to reduce the scope of, or discontinue, our operations, or reevaluate the viability of strategic alternatives.

Most of our programs, including HEPLISAV-B, incorporate TLR9 agonist CpG oligonucleotides. If any of our product candidates in clinical trials or similar products from competitors produce serious adverse event data, we may be required to delay, discontinue or modify our clinical trials or our clinical trial strategy, or significantly reevaluate strategic alternatives. If a safety risk based on mechanism of action or the molecular structure were identified, it may hinder our ability to develop our product candidates or enter into potential collaboration or commercial arrangements. Rare diseases and a numerical imbalance in cardiac adverse events have been observed in patients in our clinical trials. If adverse event data are found to apply to our TLR agonist and/or inhibitor technology as a whole, we may be required to significantly reduce or discontinue our operations.

HEPLISAV-B is subject to regulatory obligations and continued regulatory review, and if we receive regulatory approval for our other product candidates, we will be subject to ongoing FDA and foreign regulatory obligations and continued regulatory review for such products.

With respect to HEPLISAV-B and our other product candidates in development, we and our third-party manufacturers and suppliers are required to comply with applicable GMP regulations and other international regulatory requirements. The regulations require that our products and product candidates be manufactured and records maintained in a prescribed manner with respect to manufacturing, testing and quality control/quality assurance activities. Manufacturers and suppliers of key components and materials must be named in a BLA submitted to the FDA for any product candidate for which we are

seeking FDA approval. Additionally, third-party manufacturers and suppliers and any manufacturing facility must undergo a pre-approval inspection before we can obtain marketing authorization for any of our product candidates. Even after a manufacturer has been qualified by the FDA, the manufacturer must continue to expend time, money and effort in the area of production and quality control to ensure full compliance with GMP. Manufacturers are subject to regular, periodic inspections by the FDA following initial approval. Further, to the extent that we contract with third parties for the manufacture of our products or product candidates, our ability to control third-party compliance with FDA requirements will be limited to contractual remedies and rights of inspection.

If, as a result of the FDA's inspections, it determines that the equipment, facilities, laboratories or processes do not comply with applicable FDA regulations and conditions of product approval, the FDA may not approve the product or may suspend the manufacturing operations. If the manufacturing operations of any of the suppliers for our products or product candidates are suspended, we may be unable to generate sufficient quantities of commercial or clinical supplies of product to meet market demand, which would harm our business. In addition, if delivery of material from our suppliers were interrupted for any reason, we might be unable to ship our approved product for commercial supply or to supply our products in development for clinical trials. Significant and costly delays can occur if the qualification of a new supplier is required.

Failure to comply with regulatory requirements could prevent or delay marketing approval or require the expenditure of money or other resources to correct. Failure to comply with applicable requirements may also result in warning letters, fines, injunctions, civil penalties, recall or seizure of products, total or partial suspension of production, refusal of the government to renew marketing applications and criminal prosecution, any of which could be harmful to our ability to generate revenues and to our stock price.

Any regulatory approvals that we receive for our product candidates are likely to contain requirements for post-marketing follow-up studies, which may be costly. Product approvals, once granted, may be modified based on data from subsequent studies or commercial use. As a result, limitations on labeling indications or marketing claims, or withdrawal from the market may be required if problems occur after approval and commercialization.

A key part of our business strategy for products in development is to establish collaborative relationships to help fund or manage development and commercialization of our product candidates and research programs. We may not succeed in establishing and maintaining collaborative relationships, which may significantly limit our ability to continue to develop and commercialize those products and programs, if at all.

We have and may in the future need to establish collaborative relationships to obtain domestic and/or international sales, marketing, research, development and distribution capabilities for our product candidates and our discovery research programs. Failure to obtain a collaborative relationship for those product candidates and programs or HEPLISAV-B in markets outside the U.S. requiring extensive sales efforts, may significantly impair the potential for those products and programs and we may be required to raise additional capital to continue them. The process of establishing and maintaining collaborative relationships is difficult and time-consuming, and even if we establish such relationships, they may involve significant uncertainty, including:

- our partners may seek to renegotiate or terminate their relationships with us due to unsatisfactory clinical results, manufacturing issues, a change in business strategy, a change of control or other reasons;
- our shortage of capital resources may impact the willingness of companies to collaborate with us;
- our contracts for collaborative arrangements are terminable at will on written notice and may otherwise expire or terminate and we may not have alternative funding available;
- our partners may choose to pursue alternative technologies, including those of our competitors;
- we may have disputes with a partner that could lead to litigation or arbitration;
- we have limited control over the decisions of our partners and they may change the priority of our programs in a manner that would result in termination of the agreement or add significant delay in the partnered program;
- our ability to generate future payments and royalties from our partners depends upon the abilities of our partners to establish the safety and efficacy of product candidates, obtain regulatory approvals and successfully manufacture and commercialize the products developed from product candidates;
- we or our partners may fail to properly initiate, maintain or defend our intellectual property rights, where applicable, or a party may use our proprietary information in such a way as to invite litigation that could jeopardize or potentially invalidate our proprietary information or expose us to potential liability;

- our partners may not devote sufficient capital or resources towards our product candidates; and
- our partners may not comply with applicable government regulatory requirements.

Supporting diligence activities conducted by potential collaborators and negotiating the financial and other terms of a collaboration agreement are long and complex processes with uncertain results. Even if we are successful in entering into one or more collaboration agreements, collaborations may involve greater uncertainty for us, as we may have less control over certain aspects of our collaborative programs than we do over our proprietary development and commercialization programs, and the financial terms upon which collaborators may be willing to enter into such an arrangement cannot be certain. If any collaborator fails to fulfill its responsibilities in a timely manner, or at all, our research, clinical development, manufacturing or commercialization efforts pursuant to that collaboration could be delayed or terminated, or it may be necessary for us to assume responsibility for expenses or activities that would otherwise have been the responsibility of our collaborator. Despite our efforts, we may be unable to secure collaborative arrangements. If we are unable to establish and maintain collaborative relationships on acceptable terms or to successfully transition terminated collaborative agreements, we may have to delay or discontinue further development of one or more of our product candidates, undertake development and commercialization activities at our own expense or find alternative sources of capital.

We rely on CROs and clinical sites and investigators for our clinical trials. If these third parties do not fulfill their contractual obligations or meet expected deadlines, our planned clinical trials may be delayed and we may fail to obtain the regulatory approvals necessary to commercialize our product candidates.

We rely on CROs, clinical sites and investigators for our clinical trials. If these third parties do not perform their obligations or meet expected deadlines our planned clinical trials may be extended, delayed, modified or terminated. While we maintain oversight over our clinical trials and conduct regular reviews of the data, we are dependent on the processes and quality control efforts of our third-party contractors to ensure that clinical trials are conducted properly and that detailed, quality records are maintained to support the results of the clinical trials that they are conducting on our behalf. Any extension, delay, modification or termination of our clinical trials or failure to ensure adequate documentation and the quality of the results in the clinical trials could delay or otherwise adversely affect our ability to commercialize our product candidates and could have a material adverse effect on our business and operations.

If we fail to comply with the extensive requirements applicable to biopharmaceutical manufacturers and marketers under the healthcare fraud and abuse, anticorruption, privacy, transparency and other laws of the jurisdictions in which we conduct our business, we may be subject to significant liability.

Our activities, and the activities of our agents, including some contracted third parties, are subject to extensive government regulation and oversight both in the U.S. and in foreign jurisdictions. Our interactions with physicians and others in a position to prescribe or purchase our products are subject to a legal regime designed to prevent healthcare fraud and abuse and off-label promotion. We also are subject to laws pertaining to transparency of transfers of value to healthcare providers; privacy and data protection; compliance with industry voluntary compliance guidelines; and prohibiting the payment of bribes. Relevant U.S. laws include:

- the federal Anti-Kickback Statute, which prohibits persons from, among other things, knowingly and willfully soliciting, receiving, offering or paying remuneration, directly or indirectly, in exchange for or to induce either the referral of an individual for, or the purchase, order or recommendation of, any good or service for which payment may be made under federal health care programs, such as the Medicare and Medicaid programs;
- federal false claims laws, including the False Claims Act, and Civil Monetary Penalties Law, which prohibit individuals or entities from, among other things, knowingly presenting, or causing to be presented, claims for payment to the government or its agents that are false or fraudulent;
- the Federal Food, Drug and Cosmetic Act and governing regulations which, among other things, prohibit off-label promotion of prescription drugs;
- the federal Physician Payments Sunshine Act created under the Patient Protection and Affordable Care Act of 2010, as amended by the Health Care and Education and Reconciliation Act of 2010 (collectively, "ACA") which requires certain manufacturers of drugs, devices, biologics and medical supplies to report annually to the Centers for Medicare & Medicaid Services ("CMS"), information related to payments and other transfers of value to physicians (defined to include doctors, dentists, optometrists, podiatrists and chiropractors), other health care professionals (such as physician assistants and nurse practitioners), and teaching hospitals, and ownership and investment interests held by such physicians and their immediate family members;

- the federal Health Insurance Portability and Accountability Act of 1996 ("HIPAA"), which created, among other things, new federal criminal statutes that prohibit executing a scheme to defraud any healthcare benefit program and making false statements relating to healthcare matters;
- HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act, and their implementing regulations, which imposes certain requirements on "covered entities," including certain healthcare providers, health plans, and healthcare clearinghouses, and their respective "business associates" that create, receive, maintain or transmit individually identifiable health information for or on behalf of a covered entity as well as their covered subcontractors relating to the privacy, security, and transmission of individually identifiable health information;
- the Foreign Corrupt Practices Act, which prohibits the payment of bribes to foreign government officials and requires that a company's books and records accurately reflect the company's transactions; and
- foreign and state law equivalents of each of the federal laws described above, such as anti-kickback and false claims laws which may apply to items or services reimbursed by state health insurance programs or any third-party payor, including commercial insurers; state laws that require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the applicable compliance guidance promulgated by the federal government; state laws that require drug manufacturers to report information on the pricing of certain drugs; state and local laws that require the registration of pharmaceutical sales representatives; and state and foreign laws governing the privacy and security of health information, many of which differ from each other in significant ways and often are not preempted by HIPAA.

The Office of Inspector General for the Department of Health and Human Services, the Department of Justice, states' Attorneys General and other governmental authorities actively enforce the laws and regulations discussed above. These entities also coordinate extensively with the FDA, using legal theories that connect violations of the Federal Food, Drug and Cosmetic Act (such as off-label promotion) to the eventual submission of false claims to government healthcare programs. Prosecution of such promotion cases under the False Claims Act provides the potential for private parties (qui tam relators, or "whistleblowers") to initiate cases on behalf of the government and provides for significantly higher penalties upon conviction.

In the U.S., pharmaceutical and biotechnology companies have been the target of numerous government prosecutions and investigations alleging violations of law, including claims asserting impermissible off-label promotion of pharmaceutical products, payments intended to influence the referral of federal or state health care business, submission of false claims for government reimbursement, or submission of incorrect pricing information.

Violations of any of the laws described above or any other applicable governmental regulations and other similar foreign laws may subject us, our employees or our agents to significant criminal, civil and administrative penalties, including fines, civil monetary penalties, exclusion from participation in government health care programs (including Medicare and Medicaid), disgorgement, imprisonment, additional reporting requirements and oversight if we become subject to a corporate integrity agreement or similar agreement to resolve allegations of non-compliance with these laws and the restriction or restructuring of our operations, any of which could adversely affect our ability to operate our business and our financial results. Additionally, whether or not we have complied with the law, an investigation into alleged unlawful conduct may cause us to incur significant expense, cause reputational damage, divert management time and attention, and otherwise adversely affect our business. While we have developed and instituted a corporate compliance program, we cannot guarantee that we, our employees, our consultants, contractors, or other agents are or will be in compliance with all applicable U.S. or foreign laws.

It remains unclear how various state, federal, and international privacy and cybersecurity law will affect our business. For example, we don't know how the CCPA will be interpreted, but as currently written, it will likely impact our business activities and exemplifies the vulnerability of our business to not only cyber threats but also the evolving regulatory environment related to personal data. As we expand our operations, the CCPA may increase our compliance costs and potential liability. Some observers have noted that the CCPA could mark the beginning of a trend toward more stringent privacy legislation in the United States. Other states are beginning to pass similar laws.

Internationally, the General Data Protection Regulation ("GDPR") requires us to make more detailed disclosures to data subjects, requires disclosure of the legal basis on which we can process personal data, makes it harder for us to obtain valid consent for processing, will require the appointment of data protection officers when sensitive personal data, such as health data, is processed on a large scale, provides more robust rights for data subjects, introduces mandatory data breach notification through the EU, imposes additional obligations on us when contracting with service providers and requires us to

adopt appropriate privacy governance including policies, procedures, training and data audit. If we do not comply with our obligations under the GDPR, we could be exposed to fines of up to the greater of €20 million or up to 4% of our total global annual revenue in the event of a significant breach. In addition, we may be the subject of litigation and/or adverse publicity, which could adversely affect our business, results of operations and financial condition. Also, mechanisms for legally transferring information under the GDPR remain unclear. At present, there are few if any viable alternatives to the standard contractual clauses, or SCCs, so future developments may necessitate further expenditures on local infrastructure, changes to internal business processes, or may otherwise affect or restrict sales and operations.

Enacted or future legislation, including potentially unfavorable pricing regulations or other healthcare reform initiatives, may have an adverse effect on our operations and business.

We expect there will continue to be federal and state laws and/or regulations, proposed and implemented, that could impact our operations and business. For example, the ACA, among other things, imposes a significant annual fee on companies that manufacture or import branded prescription drug products. It also contains substantial provisions intended to broaden access to health insurance, reduce or constrain the growth of healthcare spending, and impose additional health policy reforms, any or all of which may affect our business. There have been executive, legal and political challenges to certain aspects of ACA. For example, President Trump signed several executive orders and other directives designed to delay, circumvent, or loosen certain requirements mandated by ACA. Concurrently, Congress considered legislation that would repeal or repeal and replace all or part of ACA. While Congress has not passed comprehensive repeal legislation, several bills affecting the implementation of certain taxes under the ACA have been signed into law. The Tax Cuts and Jobs Act of 2017 ("Tax Act") included a provision repealing, effective January 1, 2019, the tax-based shared responsibility payment imposed by ACA on certain individuals who fail to maintain qualifying health coverage for all or part of a year that is commonly referred to as the "individual mandate". In addition, the 2020 federal spending package permanently eliminated, effective January 1, 2020, the ACA-mandated "Cadillac" tax on high-cost employer-sponsored health coverage and medical device tax and, effective January l, 2021, also eliminated the health insurer tax. The Bipartisan Budget Act of 2018 ("BBA") among other things, amended the ACA, effective January 1, 2019, to increase from 50 percent to 70 percent the point-of-sale discount that is owed by pharmaceutical manufacturers who participate in Medicare Part D and close the coverage gap in most Medicare drug plans, commonly referred to as the "donut hole". On June 17, 2021, the U.S. Supreme Court dismissed a challenge on procedural grounds that argued the ACA is unconstitutional in its entirety because the "individual mandate" was repealed by Congress. Thus, the ACA will remain in effect in its current form. Further, prior to the U.S. Supreme Court ruling, on January 28, 2021, President Biden issued an executive order that initiated a special enrollment period for purposes of obtaining health insurance coverage through the ACA marketplace, which began on February 15, 2021 and will remain open through August 15, 2021. The executive order also instructed certain governmental agencies to review and reconsider their existing policies and rules that limit access to healthcare, including among others, reexamining Medicaid demonstration projects and waiver programs that include work requirements, and policies that create unnecessary barriers to obtaining access to health insurance coverage through Medicaid or the ACA. It is possible that the ACA will be subject to judicial or Congressional challenges in the future. It is unclear how such challenges and healthcare reform measures will impact the ACA and our business.

Other legislative changes have also been proposed and adopted since the ACA was enacted. For example, the Budget Control Act of 2011 resulted in aggregate reductions in Medicare payments to providers of up to two percent per fiscal year, starting in 2013 and, due to subsequent legislative amendments to the statute, will remain in effect through 2031 unless additional Congressional action is taken. However, COVID-19 relief support legislation suspended the 2% Medicare sequester from May 1, 2020 through March 31, 2022. Under current legislation, the actual reduction in Medicare payments will vary from 1% in 2022 to up to 3% in the final fiscal year of this sequester. Additionally, on March 11, 2021, President Biden signed the American Rescue Plan Act of 2021 into law, which eliminates the statutory Medicaid drug rebate cap, currently set at 100% of a drug's average manufacturer price, for single source and innovator multiple source drugs, beginning January 1, 2024. In addition, the American Taxpayer Relief Act of 2012, among other things, reduced Medicare payments to several types of providers and increased the statute of limitations period for the government to recover overpayments to providers from three to five years. Such laws, and others that may affect our business that have been recently enacted or may in the future be enacted, may result in additional reductions in Medicare and other healthcare funding.

Also, there has been heightened governmental scrutiny recently in the U.S. over pharmaceutical pricing practices in light of the rising cost of prescription drugs and biologics. Such scrutiny has resulted in several recent Congressional inquiries and proposed and enacted federal and state legislation designed to, among other things, bring more transparency to product pricing, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for products. At the federal level, the Trump administration used several means to propose or implement drug pricing reform, including through federal budget proposals, executive orders and policy initiatives. For

example, on July 24, 2020 and September 13, 2020, the Trump administration announced several executive orders related to prescription drug pricing that attempt to implement several of the administration's proposals. The FDA concurrently released a final rule and guidance in September 2020, implementing a portion of the importation executive order providing pathways for states to build and submit importation plans for drugs from Canada. Further, on November 20, 2020, the U.S. Department of Health and Human Services ("HHS") finalized a regulation removing safe harbor protection for price reductions from pharmaceutical manufacturers to plan sponsors under Part D, either directly or through pharmacy benefit managers, unless the price reduction is required by law. The implementation of the rule has been delayed by the Biden administration from January 1, 2022 to January 1, 2023 in response to ongoing litigation. The rule also creates a new safe harbor for price reductions reflected at the point-of-sale, as well as a new safe harbor for certain fixed fee arrangements between pharmacy benefit managers and manufacturers, the implementation of which have also been delayed until January 1, 2023. On November 20, 2020, CMS issued an interim final rule implementing President Trump's Most Favored Nation executive order, which would tie Medicare Part B payments for certain physician-administered drugs to the lowest price paid in other economically advanced countries, effective January 1, 2021. As a result of litigation challenging the Most Favored Nation model, on December 27, 2021, CMS published a final rule that rescinded the Most Favored Nation Model interim final rule. In July 2021, the Biden administration released an executive order, "Promoting Competition in the American Economy," with multiple provisions aimed at prescription drugs. In response to Biden's executive order, on September 9, 2021, HHS released a Comprehensive Plan for Addressing High Drug Prices that outlines principles for drug pricing reform and sets out a variety of potential legislative policies that Congress could pursue to advance these principles. In addition, Congress is considering drug pricing as part of other reform initiatives. At the state level, legislatures have increasingly passed legislation and implemented regulations designed to control pharmaceutical and biological product pricing, including price or patient reimbursement constraints, discounts, and restrictions on certain product access. In some cases, such legislation and regulations have been designed to encourage importation from other countries and bulk purchasing.

We cannot predict the initiatives that may be adopted in the future or the effect any such initiatives may have on our business. However, in the future, there will likely continue to be additional proposals relating to the reform of the U.S. healthcare system, some of which could further limit coverage and reimbursement of products, including our product candidates. Any reduction in reimbursement from Medicare or other government programs may result in a similar reduction in payments from private payors. The implementation of cost containment measures or other healthcare reforms may prevent us from being able to generate revenue, attain profitability or commercialize our products. Further, it is possible that additional governmental action is taken in response to the COVID-19 pandemic.

In connection with our work with the U.S. Department of Defense, we have become a defense contractor, and are therefore subject to new administrative burdens and control requirements in connection with the maintenance of that relationship.

In September of 2021, we entered into an agreement with the U.S. Department of Defense ("DoD") relating to the conduct of a clinical trial in connection with the development of an improved plague vaccine. In connection with this agreement we became subject to new administrative and control requirements, including certain reporting obligations as well as a requirement to develop, implement and maintain an ITAR compliance program, among other things. Further, if our efforts result in an improved plague vaccine and we enter into a supply agreement for finished plague vaccines with the DoD, we expect that such a supply contract would impose additional administrative, control, compliance and other obligations. We have limited experience developing and administering such programs. Development and maintenance of such programs can be burdensome and costly and there can be no guarantee that we will be able to maintain compliance with all of the terms of such an agreement. Failure to comply with these requirements could have a significant reputational or financial impact on our business and on our stock price.

We face product liability exposure, which, if not covered by insurance, could result in significant financial liability.

While we have not experienced any product liability claims to date, the use of any of our product candidates in clinical trials and the sale of any approved products, including HEPLISAV-B, will subject us to potential product liability claims and may raise questions about a product's safety and efficacy. As a result, we could experience a delay in our ability to commercialize one or more of our product candidates or reduced sales of any approved product candidates. In addition, a product liability claim may exceed the limits of our insurance policies and exhaust our internal resources. We have obtained limited clinical trial liability and umbrella insurance coverage for our clinical trials. This coverage may not be adequate or may not continue to be available in sufficient amounts, at an acceptable cost, or at all. While we have obtained product liability insurance coverage for HEPLISAV-B, there is a risk that this coverage may not be adequate or may not continue to be available in sufficient amounts, at an acceptable cost or at all. We also may not be able to obtain commercially reasonable product liability insurance for any product approved for marketing in the future. A product liability claim, product recalls or

other claims, as well as any claims for uninsured liabilities or in excess of insured liabilities, would divert our management's attention from our business and could result in significant financial liability.

Risks Related to our Intellectual Property

If third parties successfully assert that we have infringed their patents and proprietary rights or challenge our patents and proprietary rights, we may become involved in intellectual property disputes and litigation that would be costly, time consuming and delay or prevent development or commercialization of our product candidates.

We may be exposed to future litigation or other dispute by third parties based on claims that our products, product candidates or proprietary technologies infringe their intellectual property rights, or we may be required to enter into litigation to enforce patents issued or licensed to us or to determine the ownership, scope or validity of our or another party's proprietary rights, including a challenge as to the validity of our issued and pending claims. From time to time we have been, and in the future may become, involved in various administrative proceedings related to our intellectual property which causes us to incur certain legal expenses. If we become involved in any litigation and/or other significant proceedings related to our intellectual property or the intellectual property of others, we will incur substantial additional expenses and it will divert the efforts of our technical and management personnel.

If we or our collaborators are unsuccessful in defending or prosecuting our issued and pending claims or in defending potential claims against our products, for example, as may arise in connection with the commercialization of HEPLISAV-B or any similar or other product candidate, we or our collaborator could be required to pay substantial damages or be unable to commercialize our product candidates or use our proprietary technologies without a license from such third party. A license may require the payment of substantial fees or royalties, require a grant of a cross-license to our technology or may not be available on acceptable terms, if at all. Any of these outcomes could require us to change our business strategy and could materially impact our business and operations.

If the combination of patents, trade secrets and contractual provisions that we rely on to protect our intellectual property is inadequate, the value of our products or product candidates will decrease, and we may be unable to realize any commercial benefit from the development of a vaccine containing our CpG 1018 adjuvant.

Our success depends on our ability to:

- obtain and protect commercially valuable patents or the rights to patents both domestically and abroad;
- operate without infringing upon the proprietary rights of others; and
- prevent others from successfully challenging or infringing our proprietary rights.

We will be able to protect our proprietary rights from unauthorized use only to the extent that these rights are covered by valid and enforceable patents for a commercially sufficient term or are otherwise effectively maintained as trade secrets. We try to protect our proprietary rights by filing and prosecuting U.S. and foreign patent applications. However, in certain cases such protection may be limited, depending in part on existing patents held by third parties, or other disclosures which impact patentability, which may only allow us to obtain relatively narrow patent protection. In the U.S., legal standards relating to the validity and scope of patent claims in the biopharmaceutical field can be highly uncertain, are still evolving and involve complex legal and factual questions for which important legal principles remain unresolved.

For example, our HEPLISAV-B and CpG 1018 adjuvant have no composition of matter patent protection in the United States or elsewhere. We must therefore rely primarily on the protection afforded by method of use patents relating to HEPLISAV-B and the use of CpG 1018 in vaccines, and trade secret protection and confidentiality and other agreements to protect our interests in proprietary know-how related to HEPLISAV-B and CpG 1018. We have three issued U.S. patents relating to certain uses of HEPLISAV-B that expire in 2032. We have filed patent applications claiming compositions and methods of use of CpG 1018 for COVID-19 and other vaccines, but we cannot provide any assurances that we will receive an issued patent for any of these patent applications or that, if issued, any of these patents will provide adequate protection for any intended use of CpG 1018 in vaccines. In addition, we may be subject to co-ownership of the underlying intellectual property with our collaborators and not the sole owner. If we are unable to adequately obtain patent protection or enforce our other proprietary rights relating to CpG 1018, we may be unable to realize any recurring commercial benefit from the development of a vaccine containing CpG 1018, and we may not have the ability to prevent others from developing or commercializing a vaccine containing CpG 1018.

The biopharmaceutical patent environment outside the U.S. is also uncertain. We may be particularly affected by this uncertainty since several of our product candidates or our collaborators' vaccine candidates may initially address market opportunities outside the U.S., where we may only be able to obtain limited patent protection, if any at all. For example, while many countries such as the U.S. permit method of use patents relating to the use of drug products, in some countries the law relating to patentability of such use claims is evolving, or may prohibit certain activities, and may be unfavorably interpreted to prevent us from successfully prosecuting some or all of our pending patent applications relating to the use of CpG 1018. There are some countries that currently do not allow such method of use patents, or that significantly limit the types of uses that are patentable.

The risks and uncertainties that we face with respect to our patents and other proprietary rights include the following:

- we may not receive an issued patent for any of our patent applications or for any patent applications that we have exclusively licensed now or in the future;
- the pending patent applications we have filed or to which we have exclusive rights may take longer than we expect to result in issued patents;
- the claims of any patents that are issued may not provide meaningful protection or may not be valid or enforceable;
- we might not be able to develop additional proprietary technologies that are patentable;
- the patents licensed or issued to us or our collaborators may not provide a competitive advantage;
- patents issued to other parties may limit our intellectual property protection or harm our ability to do business;
- other parties may independently develop similar or alternative technologies or duplicate our technologies and commercialize discoveries that we attempt to patent;
- other parties may design around technologies we have licensed, patented or developed; and
- pending patent applications or issued patents may be challenged by third parties in proceedings, such as inter partes review, pre- and post-grant oppositions, and post grant review.

We also rely on trade secret protection and confidentiality agreements to protect our interests in proprietary know-how that is not patentable and for processes for which patents are difficult to enforce. We cannot be certain that we will be able to protect our trade secrets or other proprietary know-how adequately. Any disclosure of confidential data in the public domain or to third parties could allow our competitors to learn our trade secrets. If we are unable to adequately obtain or enforce proprietary rights, we may be unable to commercialize our products, enter into collaborations, generate revenues or maintain any advantage we may have with respect to existing or potential competitors.

We have in the past, and may in the future, rely on licenses to intellectual property from third parties. Impairment of these licenses or our inability to obtain or maintain them could severely harm our business.

Our current or future research and development efforts may depend in part upon our license arrangements for certain intellectual property owned by third parties. Our dependence on these licenses could subject us to numerous risks, such as disputes regarding the use of the licensed intellectual property and the creation and ownership of new discoveries under such license agreements. In addition, these license arrangements could require us to make timely payments to maintain our licenses and typically contain diligence or milestone-based termination provisions. Our failure to meet any obligations pursuant to such agreements could allow licensors to terminate our agreements or undertake other remedies such as converting exclusive to non-exclusive licenses if we are unable to cure or obtain waivers for such failures or amend such agreements on terms acceptable to us or at all. In addition, license agreements may be terminated or may expire by their terms, and we may not be able to maintain the exclusivity of these licenses. If we cannot obtain and maintain licenses that are advantageous or necessary to the development or the commercialization of our product candidates, we may be required to expend significant time and resources to develop or license similar technology or to find other alternatives to maintaining the competitive position of our products. If such alternatives are not available to us in a timely manner or on acceptable terms, we may be unable to develop or commercialize certain of our product candidates. In the absence of a current license, we may be required to redesign our technology so it does not infringe a third-party's patents, which may not be possible or could require substantial funds and time.

Risks Related to our Common Stock

Our stock price is subject to volatility, and your investment may suffer a decline in value.

The market prices for securities of biopharmaceutical companies have in the past been, and are likely to continue in the future, to be, very volatile. The market price of our common stock is subject to substantial volatility depending upon many factors, many of which are beyond our control, including:

- impact of the COVID-19 pandemic on our HEPLISAV-B vaccine, CpG 1018 adjuvant, or other product revenue;
- progress or results of any of our clinical trials or regulatory or manufacturing efforts, in particular any announcements regarding the progress or results of our planned trials and BLA filing and communications, from the FDA or other regulatory agencies;
- our ability to receive timely regulatory approval for our product candidates;
- our ability to establish and maintain collaborations for the development and commercialization of our product candidates;
- our ability to raise additional capital to fund our operations;
- technological innovations, new commercial products or drug discovery efforts and preclinical and clinical activities by us or our competitors;
- changes in our intellectual property portfolio or developments or disputes concerning the proprietary rights of our products or product candidates;
- our ability to obtain component materials and successfully enter into manufacturing relationships for our products or product candidates or establish manufacturing capacity on our own;
- our ability to establish and maintain licensing agreements for intellectual property necessary for the development of our product candidates;
- changes in government regulations, general economic conditions or industry announcements;
- changes in the structure of healthcare payment systems;
- issuance of new or changed securities analysts' reports or recommendations;
- actual or anticipated fluctuations in our quarterly financial and operating results;
- the volume of trading in our common stock;
- investor perceptions or negative announcements by our customers, competitors or suppliers regarding their own performance; and
- industry conditions and general financial, economic and political instability, as well as developments with respect to the COVID-19 global pandemic, including but not limited to regulatory initiatives, such as the imposition of compulsory licenses related to COVID-19 vaccines, that may result in a general weakening of intellectual property protections.

The stock markets in general, and the markets for biotechnology and pharmaceutical stocks in particular, have historically experienced significant volatility that has often been unrelated or disproportionate to the operating performance of particular companies, including recently in connection with the ongoing COVID-19 pandemic, which has resulted in decreased market prices, notwithstanding the lack of a fundamental change in the underlying business models or prospects of those companies. These broad market fluctuations have adversely affected and may in the future adversely affect the market price of our common stock. In this regard, worsening economic conditions, interest rate increases and/or other tapering policies from the government, and other adverse effects or developments relating to the ongoing COVID-19 pandemic or general economic environment may negatively affect the market price of our common stock, regardless of our actual operating performance.

One or more of these factors could cause a substantial decline in the price of our common stock. In addition, securities class action and shareholder derivative litigation has often been brought against a company following a decline in the market price of its securities. We have in the past been, and we may in the future be, the target of such litigation. Securities and shareholder derivative litigation could result in substantial costs, and divert management's attention and resources, which could harm our business, operating results and financial condition.

Future sales of our common stock or the perception that such sales may occur in the public market could cause our stock price to fall.

Sales of a substantial number of shares of our common stock in the public market, or the perception that these sales might occur, could depress the market price of our common stock and could impair our ability to raise capital through the sale of additional equity securities.

Under our universal shelf registration statement, we may sell any combination of common stock, preferred stock, debt securities and warrants in one or more offerings, including pursuant to our sales agreement with Cowen & Company, LLC, under which we can offer and sell our common stock from time to time up to aggregate sales proceeds of $150 million. As of December 31, 2021, we had $120.5 million remaining under our sales agreement with Cowen & Company, LLC. The sale or issuance of our securities, including those issuable upon exercise of the outstanding warrants or conversion of the preferred stock, as well as the existence of outstanding options and shares of common stock reserved for issuance under our option and equity incentive plans also may adversely affect the terms upon which we are able to obtain additional capital through the sale of equity securities.

Risks Related to Our Outstanding Convertible Notes

Servicing our debt requires a significant amount of cash, and we may not have sufficient cash flow from our business to pay our substantial debt.

Our ability to make scheduled payments of the principal of, to pay interest on or to refinance our indebtedness, including the $225.5 million in 2.50% convertible senior notes due 2026 ("Convertible Notes"), depends on our future performance, which is subject to economic, financial, competitive and other factors beyond our control. Our business may not continue to generate cash flow from operations in the future sufficient to service our debt and make necessary capital expenditures. If we are unable to generate such cash flow, we may be required to adopt one or more alternatives, such as selling assets, restructuring debt or obtaining additional equity capital on terms that may be onerous or highly dilutive. Our ability to refinance our indebtedness will depend on the capital markets and our financial condition at such time. We may not be able to engage in any of these activities or engage in these activities on desirable terms, which could result in a default on our debt obligations.

We may not have the ability to raise the funds necessary to settle conversions of the Convertible Notes in cash or to repurchase the notes for cash upon a fundamental change, and our future debt may contain limitations on our ability to pay cash upon conversion or repurchase of the Convertible Notes.

Holders of the Convertible Notes will have the right, subject to certain conditions and limited exceptions, to require us to repurchase all or a portion of their Convertible Notes upon the occurrence of a fundamental change at a fundamental change repurchase price equal to 100% of the principal amount of the Convertible Notes to be repurchased, plus accrued and unpaid interest, if any, to, but excluding, the fundamental change repurchase date. In addition, upon conversion of the Convertible Notes, unless we elect to deliver solely shares of our common stock to settle such conversion (other than paying cash in lieu of delivering any fractional share), we will be required to make cash payments in respect of the Convertible Notes being converted. Moreover, we will be required to repay the Convertible Notes in cash at their maturity unless earlier converted, redeemed or repurchased. However, we may not have enough available cash or be able to obtain financing at the time we are required to make repurchases of Convertible Notes surrendered therefor or pay cash with respect to Convertible Notes being converted. In addition, our ability to repurchase the Convertible Notes or to pay cash upon conversions of the Convertible Notes may be limited by law, by regulatory authority or by agreements governing our future indebtedness. Our failure to repurchase Convertible Notes at a time when the repurchase is required by the indenture governing the Convertible Notes or to pay any cash payable on future conversions of the Convertible Notes as required by the indenture governing the Convertible Notes would constitute a default under the indenture governing the Convertible Notes. A default under the indenture governing the Convertible Notes or the occurrence of a fundamental change itself could also lead to a default under agreements governing our future indebtedness. Moreover, the occurrence of a fundamental change under the indenture governing the Convertible Notes could constitute an event of default under any agreements governing our future indebtedness. If the repayment of the related indebtedness were to be accelerated after any applicable notice or grace periods, we may not have sufficient funds to repay the indebtedness and repurchase the Convertible Notes or make cash payments upon conversions thereof.

The conditional conversion feature of the Convertible Notes may adversely affect our financial condition and operating results.

As of October 1, 2021, the conditions allowing holders to convert all or any portion of their Convertible Notes were met, and holders of Convertible Notes are entitled to convert their Convertible Notes at any time during specified periods at their option. If one or more holders elect to convert their Convertible Notes, unless we elect to satisfy our conversion obligation by delivering solely shares of our common stock (other than paying cash in lieu of delivering any fractional share), we would be required to settle a portion or all of our conversion obligation through the payment of cash, which could adversely affect our liquidity. In addition, even if holders do not elect to convert their Convertible Notes, we could be required under applicable accounting rules to reclassify all or a portion of the outstanding principal of the Convertible Notes as a current rather than long-term liability, which would result in a material reduction of our net working capital.

Conversion of the Convertible Notes may dilute the ownership interest of our stockholders or may otherwise depress the price of our common stock.

The conversion of some or all of the Convertible Notes to shares of common stock may dilute the ownership interests of our stockholders. As of October 1, 2021, the conditions allowing holders to convert all or any portion of their Convertible Notes were met. Upon conversion of the Convertible Notes, we have the option to pay or deliver, as the case may be, cash, shares of our common stock, or a combination of cash and shares of our common stock. If we elect to settle our conversion obligation in shares of our common stock or a combination of cash and shares of our common stock, any sales in the public market of our common stock issuable upon such conversion could adversely affect prevailing market prices of our common stock. In addition, the existence of the Convertible Notes may encourage short selling by market participants because the conversion of the Convertible Notes could be used to satisfy short positions, or anticipated conversion of the Convertible Notes into shares of our common stock could depress the price of our common stock.

Certain provisions in the indenture governing the Convertible Notes may delay or prevent an otherwise beneficial takeover attempt of us.

Certain provisions in the indenture governing the Convertible Notes may make it more difficult or expensive for a third party to acquire us. For example, the indenture governing the Convertible Notes will require us, subject to certain exceptions, to repurchase the Convertible Notes for cash upon the occurrence of a fundamental change and, in certain circumstances, to increase the conversion rate for a holder that converts its Convertible Notes in connection with a make-whole fundamental change. A takeover of us may trigger the requirement that we repurchase the Convertible Notes and/or increase the conversion rate, which could make it more costly for a potential acquirer to engage in such takeover. Such additional costs may have the effect of delaying or preventing a takeover of us that would otherwise be beneficial to investors.

The Capped Calls may affect the value of the Convertible Notes and our common stock.

In connection with the issuance of the Convertible Notes, we have entered into capped call transactions with the option counterparties totaling $27.2 million (the "Capped Calls"). The Capped Calls cover, subject to customary adjustments, the number of shares of common stock that initially underlie the Capped Calls. The Capped Calls are expected to offset the potential dilution to our common stock as a result of any conversion of the Convertible Notes, subject to a cap based on the cap price.

In connection with establishing their initial hedges of the Capped Calls, we have been advised that the option counterparties and/or their respective affiliates entered into various derivative transactions with respect to our common stock concurrently with or shortly after the pricing of the Convertible Notes and/or purchased shares of our common stock concurrently with or shortly after the pricing of the Convertible Notes. In addition, the option counterparties and/or their respective affiliates may modify their hedge positions by entering into or unwinding various derivatives with respect to our common stock and/or purchasing or selling our common stock or other securities of ours in secondary market transactions following the pricing of the Convertible Notes and prior to the maturity of the Convertible Notes (and are likely to do so on each exercise date of the Capped Calls, which are expected to occur during the 30 trading day period beginning on the 31st scheduled trading day prior to the maturity date of the Convertible Notes, or following any termination of any portion of the Capped Calls in connection with any repurchase, redemption or early conversion of the Convertible Notes). This activity could also cause or avoid an increase or a decrease in the market price of our common stock or the Convertible Notes.

General Risk Factors

The loss of key personnel could delay or prevent achieving our objectives. In addition, our continued growth to support commercialization may result in difficulties in managing our growth and expanding our operations successfully.

We depend on our senior executive officers, as well as other key scientific personnel. Our commercial and business efforts could be adversely affected by the loss of one or more key members of our commercial or management staff, including our senior executive officers. We currently have no key person insurance on any of our employees.

As our operations expand, we expect that we will need to manage additional relationships with various vendors, partners, suppliers and other third parties. Future growth will impose significant added responsibilities on members of management. Our future financial performance and our ability to successfully commercialize HEPLISAV-B and to compete effectively will depend, in part, on our ability to manage any future growth effectively. To that end, we must be able to effectively manage our commercialization efforts, research efforts and clinical trials and hire, train and integrate additional regulatory, manufacturing, administrative, and sales and marketing personnel. We may not be able to accomplish these tasks, and our failure to accomplish any of them could prevent us from successfully growing our company and achieving profitability.

Our business operations are vulnerable to interruptions by natural disasters, health epidemics (such as the ongoing COVID-19 pandemic) and other catastrophic events beyond our control, the occurrence of which could materially harm our manufacturing, distribution, sales, business operations and financial results.

Our business operations are subject to interruption by natural disasters and other catastrophic events beyond our control, including, but not limited to, earthquakes, hurricanes, fires, droughts, tornadoes, electrical blackouts, public health crises and pandemics, war, terrorism, and geo-political unrest and uncertainties. We have not undertaken a systematic analysis of the potential consequences to our business that might result from any such natural disaster or other catastrophic event and have limited recovery plans in place. If any of these events occur, our manufacturing and supply chain, distribution, sales and marketing efforts and other business operations could be subject to business shutdowns or disruptions and financial results could be adversely affected. We cannot presently predict the scope and severity of any potential business shutdowns or disruptions resulting from these events, but if we or any of the third parties with whom we engage, including the suppliers, contract manufacturers, distributors and other third parties with whom we conduct business, were to experience shutdowns or other business disruptions, our ability to conduct our business in the manner and on the timelines presently planned could be materially and adversely affected in a number of ways, some of which are not predicable.

Our business could be adversely affected by health epidemics in regions where we have manufacturing facilities, sales activities or other business operations. For example, outbreaks of epidemic or pandemic diseases, such as the ongoing COVID-19 pandemic, or the fear of such events, have and could again in the future cause restrictions on supply chains, restrict access to workplaces and affect employee health and availability.

Although we maintain inventories of HEPLISAV-B and its components, our ability and those of our contractors and distributors to produce and distribute HEPLISAV-B could be adversely affected. A pandemic or similar health challenge could severely impact the U.S. healthcare system, which may have an adverse effect on usage and sales of HEPLISAV-B. In addition, any such event could result in widespread global health crisis that could adversely affect global economies and financial markets resulting in an economic downturn that could affect the demand for HEPLISAV-B and future revenue and operating results and our ability to raise additional capital when needed on acceptable terms, if at all. For example, the COVID-19 pandemic has generally resulted in significantly reduced utilization of all adult vaccines (other than the COVID-19 vaccines) since the end of the first quarter of 2020, including a reduction in the utilization of HEPLISAV-B.

Additionally, our corporate headquarters in Emeryville, California, is located in a seismically active region that also is subject to possible electrical shutdowns and wildfires. Because we do not carry earthquake insurance for earthquake-related losses and significant recovery time could be required to resume operations, our financial condition and operating results could be materially adversely affected in the event of a major earthquake or catastrophic event. We carry only limited business interruption insurance that would compensate us for actual losses from interruption of our business that may occur, and any losses or damages incurred by us in excess of insured amounts could adversely affect our business and operations.

Significant disruptions of information technology systems or breaches of data security could adversely affect our business.

Our business is increasingly dependent on critical, complex and interdependent information technology systems, including internet-based systems, to support business processes as well as internal and external communications. In addition, the COVID-19 pandemic has intensified our dependence on information technology systems as many of our critical business activities are currently being conducted remotely. The size and complexity of our computer systems make them potentially vulnerable to breakdown, malicious intrusion and computer viruses that may result in the impairment of key business processes.

In addition, our systems are potentially vulnerable to data security breaches—whether by employees or others—that may expose sensitive data to unauthorized persons. Such data security breaches could lead to the loss of trade secrets or other intellectual property, or could lead to the public exposure of personally identifiable information (including sensitive personal information) of our employees, collaborators, clinical trial patients, and others. A data security breach or privacy violation that leads to disclosure or modification of or prevents access to patient information, including personally identifiable information or protected health information, could harm our reputation, compel us to comply with federal, state and/or international data breach notification laws, subject us to mandatory corrective action, require us to verify the correctness of database contents and otherwise subject us to liability under laws and regulations that protect personal data, including, but not limited to, HIPAA, similar state data protection regulations, and the GDPR, resulting in significant penalties; increased costs; loss of revenue; expenses of computer or forensic investigations; material fines and penalties; compensatory, special, punitive or statutory damages; litigation; consent orders regarding our privacy and security practices; requirements that we provide notices, credit monitoring services and/or credit restoration services or other relevant services to impacted individuals; adverse actions against our licenses to do business; or injunctive relief. News reports have also highlighted COVID research-specific hacking and phishing attempts. Because we and our collaborators are working on vaccines, including potential COVID vaccines, we may be at higher-than-average risk for such attempts.

Compliance with these and any other applicable privacy and data security laws and regulations is a rigorous and time-intensive process, and we may be required to put in place additional mechanisms ensuring compliance with the new data protection rules. If we fail to comply with any such laws or regulations, we may face significant fines and penalties that could adversely affect our business, financial condition and results of operations. Furthermore, the laws are not consistent, and compliance in the event of a widespread data breach is costly.

U.S. and international authorities have been warning businesses of increased cybersecurity threats from actors seeking to exploit the COVID-19 pandemic. In 2020, we experienced a cybersecurity incident known as a phishing e-mail scam, and although we do not consider its impact on us to be material, if we are unable to prevent this or other such data security breaches or privacy violations or implement satisfactory remedial measures, our operations could be disrupted, and we may suffer loss of reputation, financial loss and other regulatory penalties because of lost or misappropriated information, including sensitive patient data. Moreover, failure to maintain effective internal accounting controls related to data security breaches and cybersecurity in general could impact our ability to produce timely and accurate financial statements and could subject us to regulatory scrutiny. In addition, these breaches and other inappropriate access can be difficult to detect, and any delay in identifying them may lead to increased harm of the type described above. Moreover, the prevalent use of mobile devices that access confidential information increases the risk of data security breaches, which could lead to the loss of confidential information, trade secrets or other intellectual property. While we have implemented security measures that are intended to protect our data security and information technology systems, such measures may not prevent such events.

Such disruptions and breaches of security could have a material adverse effect on our business, financial condition and results of operations.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

As of December 31, 2021, we lease our facilities in Emeryville, California and Düsseldorf, Germany.

In July 2019, we entered into an agreement to sublease 23,976 square feet of office space located at 2100 Powell Street, Emeryville, California for our global headquarters. This sublease agreement will continue until June 30, 2022.

In September 2018, we entered into an agreement to lease 75,662 square feet of laboratory and office space located at 5959 Horton Street, Emeryville, California (“Horton Street Lease”). Following our strategic organizational restructuring in May 2019, in July 2019, we entered into an agreement to sublease the entire 75,662 square feet to a third party (“Horton Street Sublease”). Both the Horton Street Lease and Horton Street Sublease will continue until March 31, 2031.

We also lease approximately 5,600 square meters of manufacturing and office space in Düsseldorf, Germany. In September 2021, we entered into a new Düsseldorf lease for the same space we previously leased, with the same landlord. The new lease will continue until December 31, 2031.

We believe that our facilities are adequate to meet our requirements for the near term.

ITEM 3. LEGAL PROCEEDINGS

From time to time in the ordinary course of business, we receive claims or allegations regarding various matters, including employment, vendor and other similar situations in the conduct of our operations. We are not currently aware of any material legal proceedings involving the Company.

ITEM 4. MINE SAFETY DISCLOSURE

Not applicable.

PART II

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

Market Information and Holders

Our common stock is traded on the Nasdaq Capital Market under the ticker symbol "DVAX".

As of February 21, 2022, there were approximately 40 holders of record of our common stock, one of which was Cede & Co., a nominee for Depository Trust Company ("DTC"). All of the shares of our common stock held by brokerage firms, banks and other financial institutions as nominees for beneficial owners are deposited into participant accounts at DTC and are therefore considered to be held of record by Cede & Co. as one stockholder.

Dividends

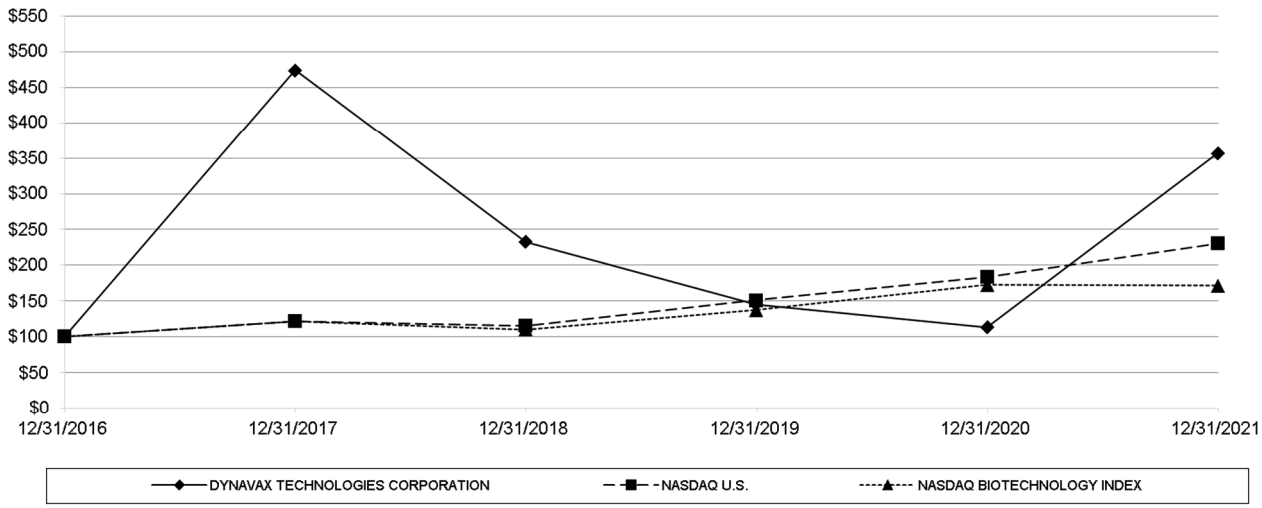
We have never paid any cash dividends on our common stock. We currently expect to retain future earnings for use in the operation and expansion of our business and do not anticipate paying any cash dividends in the foreseeable future.

Stock Performance Graph

The chart below compares total stockholder return on an investment of $100 in cash on December 31, 2016, for: our common stock, the Nasdaq Stock Market (U.S. companies), and the Nasdaq Biotechnology Index. All values assume reinvestment of the full amount of all dividends.

Note: Dynavax management cautions that the stock price performance shown in the graph below should not be considered indicative of potential future stock price performance.

COMPARISON OF 5 -YEAR CUMULATIVE TOTAL RETURN
AMONG DYNAVAX TECHNOLOGIES, NASDAQ MARKET INDEX, AND SIC CODE INDEX



ASSUMES $100 INVESTED ON DECEMBER 31, 2016
ASSUMES DIVIDENDS REINVESTED
FISCAL YEAR ENDING DECEMBER 31, 2021

This Section is not "soliciting material," is not deemed "filed" with the SEC and is not to be incorporated by reference in any filing of Dynavax Technologies Corporation under the Securities Act, or the Exchange Act, whether made before or after the date hereof and irrespective of any general incorporation language in any such filing.

Recent Sales of Unregistered Securities

None.

Issuer Purchases of Equity Securities

None.

ITEM 6. [RESERVED]

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

The following Management's Discussion and Analysis of Financial Condition and Results of Operations contains forward-looking statements that involve a number of risks and uncertainties. Our actual results could differ materially from those indicated by forward-looking statements as a result of various factors, including but not limited to, the period for which we estimate our cash resources are sufficient, the availability of additional funds, as well as those set forth under "Risk Factors" and those that may be identified from time to time in our reports and registration statements filed with the Securities and Exchange Commission.

The following discussion and analysis is intended to provide an investor with a narrative of our financial results and an evaluation of our financial condition and results of operations. The discussion should be read in conjunction with the Consolidated Financial Statements and the related notes thereto set forth in "Item 8—Financial Statements and Supplementary Data."

Overview

We are a commercial stage biopharmaceutical company focused on developing and commercializing innovative vaccines. Our first marketed product, HEPLISAV-B® (Hepatitis B Vaccine (Recombinant), Adjuvanted) is approved in the United States and European Union for prevention of infection caused by all known subtypes of hepatitis B virus in adults age 18 years and older. We also manufacture and sell CpG 1018, the adjuvant used in HEPLISAV-B. We are working to develop CpG 1018 as a premier vaccine adjuvant through research collaborations and partnerships. Current collaborations are focused on adjuvanted vaccines for COVID-19, plague, Tdap, seasonal influenza, universal influenza and shingles.

In Phase 3 trials, HEPLISAV-B demonstrated faster and higher rates of protection with two doses in one month compared to another currently approved hepatitis B vaccine which requires three doses over six months, with a similar safety profile. HEPLISAV-B is the only two-dose hepatitis B vaccine for adults approved in the U.S. and the European Union.

We have worldwide commercial rights to HEPLISAV-B and we market it in the United States. There are three other vaccines approved for the prevention of hepatitis B in the U.S.: Engerix-B and Twinrix® from GlaxoSmithKline plc and Recombivax-HB® from Merck & Co. We received Marketing Authorization approval of HEPLISAV-B in February 2021 from the European Commission for prevention of infection caused by all known subtypes of hepatitis B virus in adults age 18 years and older. In May 2021, we entered into a commercialization agreement with Bavarian Nordic for the marketing and distribution of HEPLISAV-B in Germany.

All of our HEPLISAV-B sales are to certain wholesalers and specialty distributors in the U.S. whose principal customers include independent hospitals and clinics, integrated delivery networks, public health clinics and prisons, the Departments of Defense and Veterans Affairs and retail pharmacies. For the year ended December 31, 2021, HEPLISAV-B product revenue, net was $61.9 million.

In January 2021, we entered into an agreement (the "CEPI Agreement") with Coalition for Epidemic Preparedness Innovations ("CEPI") for the manufacture and reservation of a specified quantity of CpG 1018 adjuvant. In May 2021, we entered into the first amendment (the "Amendment") to the CEPI Agreement. The agreement enables CEPI to direct the supply of CpG 1018 adjuvant to CEPI partner(s). In exchange for reserving CpG 1018 adjuvant, CEPI has agreed to provide advance payments in the form of an interest-free, unsecured, forgivable loan of up to $176.4 million.

In July 2021, we entered into an agreement (the "Bio E Supply Agreement") with Biological E. Limited ("Bio E"), for the commercial supply of CpG 1018 adjuvant, for use with Bio E's subunit COVID-19 vaccine candidate, CORBEVAX™. Under the Bio E Supply Agreement, Bio E has committed to purchase specified quantities of CpG 1018 adjuvant, at pre-negotiated prices pursuant to the CEPI Agreement, for use in Bio E's commercialization of its CORBEVAX vaccine with specified delivery dates in 2021 and the first quarter of 2022. The Bio E Supply Agreement also provides terms for Bio E to order additional quantities of CpG 1018 adjuvant beyond the quantities reserved by CEPI. In December 2021, CORBEVAX received approval for emergency use from the Drugs Controller General of India.

In June 2021, we entered into an agreement (the "Clover Supply Agreement") with Zhejiang Clover Biopharmaceuticals, Inc. and Clover Hong Kong Inc. (collectively, "Clover"), for the commercial supply of CpG 1018 adjuvant, for use with its protein-based COVID-19 vaccine candidate, adjuvanted with our CpG 1018 adjuvant, SCB-2019. In September 2021, Clover reported that SCB-2019 achieved the primary and secondary efficacy endpoints, and with favorable safety profile, in a global Phase 2/3 clinical trial.

In February 2021, we entered into a Supply Agreement ("Medigen Supply Agreement") with Medigen Vaccine Biologics ("Medigen") to manufacture and supply specified quantities of CpG 1018 adjuvant for use in the development and commercialization of Medigen's COVID-19 vaccine, adjuvanted with our CpG 1018 adjuvant, MVC-COV1901, for delivery in the first and second quarters of 2021. In August 2021, we entered into a second supply agreement ("Medigen Supply Agreement No. 2") to manufacture and supply additional specified quantities of CpG 1018 adjuvant for delivery in the third and fourth quarter of 2021. In August 2021, Medigen launched MVC-COV1901 after Medigen received Taiwan Emergency Use Authorization and approval for inclusion in Taiwan's COVID-19 vaccine immunization program.

In the third quarter of 2020, we announced a commercial supply agreement (the "Valneva Supply Agreement") with Valneva Scotland Limited ("Valneva") to cover the supply of CpG 1018 adjuvant for its SARS-COV-2 vaccine candidate, VLA2001, in support of its supply agreement with the United Kingdom Government and subject to the terms of such agreement. In September 2021, Valneva received a termination notice from the United Kingdom Government in relation to such supply agreement. However, Valneva continues the clinical development of VLA2001 and the pivotal Phase 3 trial for VLA2001, COV-COMPARE, remains ongoing at Public Health England. In October 2021, Valneva reported that VLA2001 met both co-primary endpoints in the COV-COMPARE trial, and that VLA2001 was well-tolerated, demonstrating a statistically significant better tolerability profile compared to active comparator vaccine, AstraZeneca's AZD1222 (ChAdOx1-S).

In October 2021, we entered into a letter agreement (the "Valneva Amendment"), amending the Valneva Supply Agreement. Under the Valneva Amendment, we and Valneva agreed to the cancellation of the two then outstanding purchase orders for CpG 1018 adjuvant under the Valneva Supply Agreement that had not been fulfilled as of the date of the Valneva Amendment, while concurrently committing to purchase a reduced amount of CpG 1018 adjuvant under a new purchase order. We are entitled to retain the advance payments made by Valneva under such cancelled purchase orders to the extent such advance payments do not count towards the advance payment dues under the Valneva Amendment.

For the year ended December 31, 2021, CpG 1018 product revenue, net, was $375.2 million.

In September 2021, we entered into an agreement with the U.S. Department of Defense ("DoD") for the development of an improved recombinant plague vaccine adjuvanted with CpG 1018, whereby the DoD will provide funding of up to approximately $22.0 million over two and a half years. Under the agreement, we agreed to conduct a Phase 2 clinical trial combining our CpG 1018 adjuvant with the DoD's rF1V vaccine. We anticipate the Phase 2 trial will commence in 2022.

In May 2021, we issued $200.0 million aggregate principal amount of 2.50% convertible senior notes due 2026 (the "Convertible Notes") in a private placement. The purchasers partially exercised their option to purchase additional Convertible Notes and we issued an additional $25.5 million of the Convertible Notes in May 2021. Total proceeds from the issuance of the Convertible Notes, net of debt issuance and offering costs of $5.7 million, were $219.8 million. We used $190.2 million of the net proceeds to repay, in full, our outstanding debt and other obligations under the Loan Agreement and $27.2 million of the net proceeds to pay the costs of the capped call transactions described below.

In connection with the issuance of the Convertible Notes, we entered into capped call transactions with one of the initial purchasers and other financial institutions, totaling $27.2 million (the "Capped Calls"). The Capped Calls have an initial strike price and an initial cap price of $10.47 per share and $15.80 per share, respectively, subject to certain adjustments. The Capped Calls are expected to offset the potential dilution to our common stock as a result of any conversion of the Convertible Notes, subject to a cap based on the cap price.

In May 2021, we repaid the term loans and paid-in-kind interest (collectively "Term Loans Principal") under the Loan Agreement with CRG Servicing LLC ("Loan Agreement"), in full, using the net proceeds from the Convertible Notes issuance described above. In connection with the early repayment of the Term Loans Principal, during the three months ended June 30, 2021, we recorded $5.2 million loss on debt extinguishment related to the amount we paid to terminate the Term Loans Principal in excess of its carrying value at the time of the repayment. Our final payment of $190.2 million to CRG Servicing LLC satisfied all of our obligations under the Loan Agreement. With the full repayment of the Term Loans Principal, all security interests, covenants, liens and encumbrances under the Loan Agreement were permanently released.

COVID-19 Update

The ongoing COVID-19 global pandemic has presented a substantial public health and economic challenge around the world and is affecting our employees, patients, communities and business operations, as well as the U.S. economy and financial markets. The full extent to which the COVID-19 pandemic will directly or indirectly impact our business, results of operations and financial condition will depend on future developments that are highly uncertain and cannot be accurately predicted, including new information that may emerge concerning COVID-19 virus or current or newly discovered variants, the actions taken to contain it or treat its impact and the economic impact on local, regional, national and international markets. We continue to assess the potential evolving impact of the COVID-19 pandemic on our business and operations.

To date, we and our distribution partners have been able to continue to supply HEPLISAV-B throughout the United States, and currently do not anticipate any interruptions in supply. Due to the ongoing COVID-19 global pandemic, most medical centers began restricting access to their facilities and focused on providing care to only the most severely affected patients, beginning in March 2020. As states began phasing out restrictions in the middle of 2020, medical centers have been operating under limited capacity or with strict social distancing rules. There has been a significant reduction in the utilization of adult vaccines (other than COVID-19 vaccines) since the end of the first quarter of 2020, including a reduction in the utilization of HEPLISAV-B which has impacted sales of HEPLISAV-B. While adult hepatitis B vaccine utilization rates have continued to stay below pre-pandemic levels, we are starting to see a recovery in such utilization from all-time lows. Additionally, HEPLISAV-B continues to gain market share in the U.S. hepatitis B adult vaccine market.

We are continuing to closely monitor the impact of the COVID-19 pandemic on our business and are taking proactive efforts to help protect the health and safety of our workforce, patients and healthcare professionals, and to continue our business operations and advance our goal of bringing important new vaccines to patients as rapidly as possible. We have implemented measures to help protect the health and safety of our workforce, including a mandatory work-from-home policy for employees who can perform their jobs offsite and continue to actively evaluate a return to the office at an appropriate time. In the conduct of our business activities, we are also taking actions to help protect the safety of patients and healthcare professionals. In the early stages of the pandemic, our field-based personnel reduced in-person customer interactions in healthcare settings and primarily used electronic communication, such as emails, phone calls and video conferences. Many health care and contracting professionals at hospitals and other medical institutions with whom our field-based personnel interact began conducting a greater proportion of their work from their homes and are facing additional demands on their time during the COVID-19 pandemic. While the different quality of electronic interactions as compared with in-person interactions, as well as the reduced quantity of interactions during the COVID-19 pandemic, impacted the effectiveness of our sales personnel, we have gradually moved back to in-person interactions in many cases. With the rise of new variants, and related precautions, however, our customers' procurement activities and those of our collaborators continue to be impacted which could negatively affect our overall product sales. It is possible that we may have to limit in-person engagement again in the future.

Our HEPLISAV-B post-marketing follow-up has been completed. In April 2021, we announced the results of the post-marketing study assessing the rates of occurrence of acute myocardial infarction ("AMI") in persons receiving HEPLISAV-B compared with Engerix-B. The results provided evidence there is no increased risk of AMI associated with vaccination with HEPLISAV-B compared to Engerix-B. We expect data from the autoimmune portion of our observational study to be available in the first quarter of 2022. Our HEPLISAV-B dialysis study has also been completed. Final immunogenicity results included a seroprotection rate of 89.3% with high levels of anti-HBs antibodies. Safety data showed HEPLISAV-B was well tolerated and no safety concerns were observed.

The extent of the impact of the COVID-19 pandemic on our ability to generate sales and revenues, our regulatory efforts, our corporate development objectives and the value of and market for our common stock, will depend on future developments that are highly uncertain and cannot be predicted with confidence at this time. Because of the above and other factors, our results of operations may vary substantially from year to year and from quarter to quarter and, as a result, we believe that period-to-period comparisons of our operating results may not be meaningful and should not be relied upon as being indicative of our future performance. For additional information on the various current and future potential risks posed by the COVID-19 pandemic, please read Item 1A. Risk Factors, included herein.

We have been actively pursuing opportunities to collaborate with other organizations on the development of a COVID-19 vaccine, by leveraging CpG 1018 adjuvant, our toll-like receptor 9 ("TLR9") agonist, which is also used in our HEPLISAV-B product. Since the first half of 2021, we announced multiple collaborations focused on COVID-19 and we continue to work to identify other programs where CpG 1018 adjuvant can be utilized to enhance the immune response to a coronavirus vaccine or other vaccines. To date, two of our collaborators have received emergency use authorizations for their

COVID-19 vaccines, and we anticipate that more will be announced during 2022. We and our contract manufacturers are developing plans to help scale-up activities to support pandemic-level of production of our CpG 1018 adjuvant, as necessary to support these and any future collaborations. There can be no assurance we will be successful in our efforts to help develop or supply adjuvanted COVID-19 vaccines or other vaccines.

Critical Accounting Estimates

We prepare our consolidated financial statements in accordance with U.S. generally accepted accounting principles. In doing so, we are required to make estimates and assumptions. Our critical accounting estimates are those estimates that involve a significant level of uncertainty at the time the estimate was made, and changes in them have had or are reasonably likely to have a material effect on our financial condition or results of operations. Actual results could differ materially from our estimates. We base our estimates on past experience and other assumptions that we believe are reasonable under the circumstances, and we evaluate these estimates on an ongoing basis.

See Note 2 to the Consolidated Financial Statements in this Annual Report on Form 10-K for a summary of our significant accounting policies.

Revenue Recognition

Product Revenue, Net – HEPLISAV-B

We recognize revenue when we transfer control of promised goods to the customer at the net sales price, which includes estimates such as product returns, chargebacks, discounts, rebates and other fees. While each item is more fully described in Note 2 to the Consolidated Financial Statements, the following items reflect the more critical and significant estimates used in the preparation of our consolidated financial statements. Our estimates of such items are inherently uncertain and if we were to change any of these judgments or estimates, it could cause a material increase or decrease in the amount of accounts receivable reserves or revenue reserves accrual that we report in a particular period.

Product Returns: Consistent with industry practice, we offer our customers a limited right of return based on the product's expiration date for product that has been purchased from us. We estimate the amount of our product sales that may be returned by our customers and record this estimate as a reduction of revenue in the period the related product revenue is recognized. We consider several factors in the estimation of potential product returns including expiration dates of the product shipped, the limited product return rights, available information about our customers' inventory and other relevant factors.

Chargebacks: Our customers subsequently resell our product to healthcare providers, pharmacies and others. In addition to distribution agreements with our customers, we enter into arrangements with qualified healthcare providers that provide for chargebacks and discounts with respect to the purchase of our product. Chargebacks represent the estimated obligations resulting from contractual commitments to sell product to qualified healthcare providers at prices lower than the list prices charged to customers who directly purchase the product from us. These reserves are established in the same period that the related revenue is recognized, resulting in a reduction of product revenue and accounts receivable. Chargeback amounts are determined at the time of resale to the qualified healthcare providers by customers, and we issue credits for such amounts generally within a few weeks of the customer's notification to us of the resale. Reserves for chargebacks consists of credits that we expect to issue for units that remain in the distribution channel inventories at each reporting period end that we expect will be sold to the qualified healthcare providers, and chargebacks for units that our customers have sold to the qualified healthcare providers, but for which credits have not been issued.

Rebates: Under certain contracts, customers may obtain rebates for purchasing minimum volumes of our product. We estimate these rebates based upon the expected purchases and the contractual rebate rate and record this estimate as a reduction in revenue in the period the related revenue is recognized.

Inventories, net

Inventory is stated at the lower of cost or estimated net realizable value, on a first-in, first-out, or FIFO, basis. We primarily use actual costs to determine our cost basis for inventories. Our assessment of market value requires the use of estimates regarding the net realizable value of our inventory balances, including an assessment of excess or obsolete inventory. We determine excess or obsolete inventory based on multiple factors, including an estimate of the future demand for our products, product expiration dates and current sales levels. Our assumptions of future demand for our products are inherently uncertain and if we were to change any of these judgments or estimates, it could cause a material increase or decrease in the amount of inventory reserves that we report in a particular period.

Stock-Based Compensation

The fair value of stock options is estimated on the date of grant using the Black-Scholes option pricing model. The Black-Scholes model requires us to make estimates and assumptions. Our estimate of volatility is based on the historical volatility of our stock price over the term of the awards. We derive the expected term assumption based on our historical settlement experience. Stock-based compensation cost is recognized only for awards ultimately expected to vest. Our estimate of the forfeiture rate is based primarily on our historical experience. In the future, as additional empirical evidence regarding these input estimates becomes available, we may change or refine our approach of deriving these input estimates. These changes could impact our fair value of stock options granted in the future.

Income Taxes

Significant judgment is required in determining our provision for income taxes, our deferred tax assets and liabilities and the valuation allowance recorded against our net deferred tax assets. Deferred tax assets and liabilities are determined using the enacted tax rates in effect for the years in which those tax assets are expected to be realized. A valuation allowance is established when it is more likely than not the future realization of all or some of the deferred tax assets will not be achieved. The evaluation of the need for a valuation allowance is performed on a jurisdiction-by-jurisdiction basis and includes a review of all available positive and negative evidence, including future reversals of existing taxable temporary differences, projected future taxable income, tax planning strategies and recent financial operations.

Based on all available evidence, both positive and negative, and the weight of that evidence to the extent such evidence can be objectively verified, we believe that recognition of the deferred tax assets arising from the above-mentioned future tax benefits is currently not more likely than not to be realized and, accordingly, we have determined a need for a full valuation allowance. Given our current earnings, we believe that, within the next twelve months, sufficient positive evidence may become available to allow us to reach a conclusion that a portion of the valuation allowance recorded against the deferred tax assets held may be reversed. A reversal would result in an income tax benefit for the quarterly and annual fiscal period in which we determine to release the valuation allowance. However, the exact timing and amount of a valuation allowance release are subject to change on the basis of the level of profitability that we actually achieve.

Recent Accounting Pronouncements

See Note 2 – Summary of Significant Accounting Policies of the Notes to Consolidated Financial Statements (Part II, Item 8 of this Form 10-K) for information regarding recent accounting pronouncements that are of significance, or potential significance to us..

Results of Operations

This section of this Form 10-K generally discusses 2021 and 2020 items and year-to-year comparisons between 2021 and 2020. Discussions of 2019 items and year-to-year comparisons between 2020 and 2019 that are not included in this Form 10-K can be found in "Management's Discussion and Analysis of Financial Condition and Results of Operations" in Part II, Item 7 of the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2020.

Revenues

Revenues consist of amounts earned from product sales and other revenues. Product revenue, net, includes sales of HEPLISAV-B and CpG 1018 adjuvant.

Revenue from HEPLISAV-B product sales is recorded at the net sales price, which includes estimates of product returns, chargebacks, discounts, rebates and other fees. We sell our CpG 1018 adjuvant to our collaboration partners for use in their development and/or potential commercialization of COVID-19 vaccines. Overall, product revenue, net, reflects our best estimates of the amount of consideration to which we are entitled based on the terms of the contract.

Actual amounts of consideration ultimately received may differ from our estimates. If actual results in the future vary from our estimates, we will adjust these estimates, which would affect net product revenue and earnings in the period such variances become known.

The following is a summary of our revenues (in thousands, except for percentages):

	Year Ended December 31,			Increase (Decrease) from 2020 to 2021	
Revenues:	**2021**	**2020**	**2019**	**$**	**%**
HEPLISAV-B	$ 61,870	$ 36,030	$ 34,644	$ 25,840	72%
CpG 1018	375,229	3,277	-	371,952	11,350%
Total product revenue, net	437,099	39,307	34,644	397,792	1,012%
Other revenue	2,343	7,244	575	(4,901)	(68)%
Total revenues	$ 439,442	$ 46,551	$ 35,219	$ 392,891	844%

2021 versus 2020

HEPLISAV-B product revenue for the year ended December 31, 2021 increased compared to the same period in 2020. Approximately $21.4 million of the increase was due to higher volume driven by an increase in HEPLISAV-B demand and market share gains in the U.S. Approximately $4.5 million of the increase was due to higher net sales price.

In September 2020, we began selling our CpG 1018 adjuvant to our collaboration partners for their use in development and/or commercialization of COVID-19 vaccines. In 2021, we executed supply agreements with several major collaboration partners. The increase in CpG 1018 adjuvant product revenue for the year ended December 31, 2021, compared to the same period in 2020, was due to an increase sales volume as we continued to manufacture and ship CpG 1018 adjuvant pursuant to our supply and collaboration agreements.

The decrease in other revenue for the year ended December 31, 2021, compared to the same period of 2020, was due to the termination of an agreement with CEPI resulting in the recognition of $6.3 million in previously received reservation payments. We entered into a new agreement with CEPI in January 2021 (see Note 9 to the Consolidated Financial Statements). The decrease was partially offset by an increase in other revenue due to the recognition of $1.2 million, in the third quarter of 2021, in connection with the termination of a certain grant agreement. Other revenue also includes grant revenue from our agreement with the U.S. Department of Defense and collaboration revenue related to services performed under a collaboration agreement with Serum Institute of India Pvt. Ltd.

Cost of Sales – Product

Cost of sales - product consists primarily of raw materials, certain fill, finish and overhead costs and any inventory adjustment charges for pre-filled syringes ("PFS") of HEPLISAV-B and inventory costs to produce CpG 1018 adjuvant for our collaboration partners. Our HEPLISAV-B PFS finished goods inventory previously included components for which a portion of the manufacturing costs were expensed to research and development prior to the approval of the PFS presentation by the United States Food and Drug Administration ("FDA") in March 2018. Substantially all the inventory that was previously expensed to research and development has been sold to customers.

The following is a summary of our cost of sales - product (in thousands, except for percentages):

	Year Ended December 31,			Increase (Decrease) from 2020 to 2021	
Cost of Sales - Product	**2021**	**2020**	**2019**	**$**	**%**
HEPLISAV-B	$ 26,999	$ 10,057	$ 10,172	$ 16,942	168%
CpG 1018	146,573	1,353	-	$ 145,220	10,733%
Total cost of sales - product	$ 173,572	$ 11,410	$ 10,172	$ 162,162	1,421%

2021 versus 2020

For the year ended December 31, 2021, HEPLISAV-B cost of sales-product increased compared to the same period in 2020. Approximately $5.0 million of the increase was due to higher sales volume and approximately $3.7 million of the increase was due to higher unit costs. In addition, included in HEPLISAV-B cost of sales - product for the year ended December 31, 2021 was a $4.8 million of excess capacity charge in connection with an expansion project at our manufacturing facility in Düsseldorf. Additionally, due to the COVID-19 pandemic and its prolonged impact on vaccine utilization and corresponding revisions to our sales forecast, we recorded an approximately $2.6 million write-off to cost of sales – product associated with HEPLISAV-B slow moving short-dated inventory that had been manufactured prior to the beginning of the COVID-19 pandemic. We expect to incur additional excess capacity charge in 2022 as the manufacturing facility expansion project in Düsseldorf continues.

In September 2020, we began selling our CpG 1018 adjuvant to our collaboration partners for their use in development and/or commercialization of COVID-19 vaccines. In 2021, we executed supply agreements with several major collaboration partners. The increase in CpG 1018 adjuvant cost of sales-product for the year ended December 31, 2021, compared to the same period in 2020, was due to an increase sales volume as we continued to manufacture and ship CpG 1018 adjuvant pursuant to our supply and collaboration agreements.

Research and Development

Research and development expense consists, primarily, of compensation and related personnel costs (which include benefits, recruitment, travel and supply costs), outside services, allocated facility costs and non-cash stock-based compensation. Outside services consist of costs associated with clinical development, process development, preclinical discovery and development, regulatory filings and research, including fees and expenses incurred by contract research organizations, clinical study sites, and other service providers.

The following is a summary of our research and development expense (in thousands, except for percentages):

	Year Ended December 31,			Increase (Decrease) from 2020 to 2021	
Research and Development:	**2021**	**2020**	**2019**	**$**	**%**
Compensation and related personnel costs	$ 12,136	$ 10,328	$ 21,933	$ 1,808	18%
Outside services	15,767	16,064	25,437	$ (297)	(2)%
Facility costs	507	1,215	6,903	$ (708)	(58)%
Non-cash stock-based compensation	3,818	1,000	8,058	$ 2,818	282%
Total research and development	$ 32,228	$ 28,607	$ 62,331	$ 3,621	13%

2021 versus 2020

Compensation and related personnel costs and non-cash stock-based compensation for the year ended December 31, 2021 increased, compared to the same period in 2020, primarily due to higher headcount to support vaccine clinical and development activities. In addition, non-cash stock-based compensation for year ended December 31, 2020 included reversal of expenses related to cancellation of certain equity grants.

For the year ended December 31, 2021, outside services decreased, compared to the same period in 2020, due to (i) approximately $2.3 million decrease due to winding down of our immuno-oncology study (ii) offset by approximately $1.8 million increase in vaccine clinical and development activities.

Facility costs, which primarily comprise of occupancy and related expenses, decreased, as compared to the same period in 2020, due to lower overhead allocation to research and development functions.

We expect research and development expenses to increase in 2022 as we continue to advance our product candidates with CpG 1018 adjuvant through pre-clinical and clinical collaborations and additional discovery efforts.

Selling, General and Administrative

Selling, general and administrative expense consists primarily of compensation and related costs for our commercial support personnel, medical education professionals and personnel in executive and other administrative functions, including legal, finance and information technology; costs for outside services such as sales and marketing, post-marketing studies of HEPLISAV-B, accounting, commercial development, consulting, business development, investor relations and insurance; legal costs that include corporate and patent-related expenses; allocated facility costs and non-cash stock-based compensation.

The following is a summary of our selling, general and administrative expenses (in thousands, except for percentages):

	Year Ended December 31,			Increase (Decrease) from 2020 to 2021	
Selling, General and Administrative:	**2021**	**2020**	**2019**	**$**	**%**
Compensation and related personnel costs	$ 43,135	$ 31,191	$ 28,525	$ 11,944	38%
Outside services	27,981	24,759	26,269	3,222	13%
Legal costs	1,906	2,296	2,293	(390)	(17)%
Facility costs	12,240	11,425	7,675	815	7%
Non-cash stock-based compensation	14,894	9,585	10,224	5,309	55%
Total selling, general and administrative	$ 100,156	$ 79,256	$ 74,986	$ 20,900	26%

2021 versus 2020

For the year ended December 31, 2021, compensation and related personnel costs increased, as compared to the same period in 2020, due to higher headcount in connection with the expansion of our field sales force in July 2021, increase in business travel as COVID-19 travel restrictions were easing and increase in recruiting expenses.

For the year ended December 31, 2021, outside services increased, as compared to the same period in 2020 primarily due to an overall increase in sales and marketing efforts, offset by $2 million decrease in the amount we paid to Symphony Dynamo, Inc. and Symphony Dynamo Holdings LLC in connection with the sale of our immuno-oncology compound, SD-101 in July 2020.

Facility costs, which primarily comprise of occupancy and related expenses, increased, as compared to the same period in 2020, due to higher overhead allocation to selling, general and administrative functions.

The increase in non-cash stock-based compensation for the year ended December 31, 2021, compared to the same period in 2020, was primarily due to higher headcount in connection with the expansion of our field sales force in July 2021. In addition, non-cash stock-based compensation for the year ended December 31, 2020 included reversal of expenses related to cancellation of certain equity grants.

Gain on Sale of Assets

In July 2020, we sold assets related to our immuno-oncology compound, SD-101, which included intellectual property, clinical and non-clinical data, regulatory filings, clinical supply inventory and certain contracts to Surefire Medical Inc. d/b/a TriSalus Life Sciences ("TriSalus"). Pursuant to the Asset Purchase Agreement, we received $5 million upon closing of the transaction and $4 million in December 2020 as reimbursement for certain clinical trial expenses. In addition, we could receive up to an additional $250 million upon the achievement of certain development, regulatory, and commercial milestones and low double-digit royalties based on potential future net sales of product containing SD-101 compound. In the third quarter of 2020, we recognized a gain on sale of SD-101 assets of $6.9 million, net of transaction costs.

In September 2021, we received payment of $1 million from TriSalus for their meeting a pre-commercialization milestone which was recognized as a gain on sale of SD-101 assets our consolidated statements of operations.

Restructuring

On May 23, 2019, we implemented a strategic organizational restructuring, principally to align our operations around our vaccine business and significantly curtail further investment in our immuno-oncology business. In connection with the restructuring, we reduced our workforce by approximately 80 positions, or by approximately 36%, of U.S.-based personnel. We have completed our restructuring activities and recognized restructuring costs of $13.4 million in 2019.

Other Income (Expense)

Interest income is reported net of amortization of premiums and discounts on marketable securities and includes realized gains on investments. Interest expense includes the stated interest and accretion of discount and end of term fee related to our terminated long-term debt agreement and Convertible Notes. Sublease income is recognized in connection with our sublease of office and laboratory space. Loss on debt extinguishment reflects the amount we paid to terminate our long-term debt in excess of its carrying value at the time of the extinguishment. Change in fair value of warrant liability reflects the changes in fair value of warrants issued in connection with equity financing in August 2019. Other includes gains and losses on foreign currency transactions and disposal of property and equipment.

The following is a summary of our other income (expense) (in thousands, except for percentages):

	Year Ended December 31,			Increase (Decrease) from 2020 to 2021	
	2021	2020	2019	$	%
Interest income	$ 140	$ 1,260	$ 3,370	$ (1,120)	(89)%
Interest expense	$ (11,176)	$ (19,062)	$ (16,977)	$ (7,886)	(41)%
Sublease income	$ 7,735	$ 7,706	$ 2,619	$ 29	0%
Loss on debt extinguishment	$ (5,232)	$ -	$ -	$ 5,232	NM
Change in fair value of warrant liability	$ (49,354)	$ 4,124	$ (7,500)	$ (53,478)	(1,297)%
Other	$ 922	$ (897)	$ 731	$ 1,819	203%

NM = Not meaningful

2021 versus 2020

Interest income for the year ended December 31, 2021 decreased, as compared to the same period in 2020, primarily due to lower yields on our marketable securities portfolio. Interest expense for the year ended December 31, 2021 decreased, as compared to the same period in 2020, due to the repayment of our long-term debt in May 2021, replaced by the issuance of Convertible Notes in May 2021 at a lower effective interest rate. In connection with the repayment of our long-term debt, we recorded a one-time loss on debt extinguishment of $5.2 million in the second quarter of 2021. The change in the fair value of warrant liability is primarily due to the increase in our stock price during the year ended December 31, 2021. The change in other is primarily due to foreign currency transactions and related fluctuations in the value of the Euro compared to the U.S. dollar.

Income Taxes

Our income tax expense and effective income tax rate were as follows (in thousands, except for percentages):

	Year Ended December 31,			Increase (Decrease) from 2020 to 2021	
	2021	2020	2019	$	%
Income tax expense	$ 808	$ -	$ -	$ 808	NM
Effective income tax rate	1.0%	0%	0%	1.0%	NM

2021 versus 2020

We recorded income tax expense of $0.8 million for the year ended December, 31, 2021 resulting from taxable income compared to zero income tax expense in the years ending December 31, 2020 and 2019 where we recorded taxable losses. Our effective tax rate for the year ended December 31, 2021 was 1.03% which is primarily comprised of net operating losses and research and development credits as well as changes in our valuation allowance.

Liquidity and Capital Resources

As of December 31, 2021, we had $546.0 million in cash, cash equivalents and marketable securities. Since our inception, we have relied primarily on the proceeds from public and private sales of our equity securities, borrowings, government grants and revenues from product sales and collaboration agreements to fund our operations. Our funds are currently invested in money market funds, U.S. treasuries, U.S. government agency securities and corporate debt securities. We currently anticipate that our cash, cash equivalents and short-term marketable securities as of December 31, 2021, and anticipated revenues from HEPLISAV-B and CpG 1018 will be sufficient to fund our operations for at least the next 12 months from the date of this filing.

Advanced payments received from CEPI to reserve a specified quantity of CpG 1018 are initially accounted for as long-term deferred revenue. When we deliver CpG 1018 adjuvant to CEPI partner(s) or when we receive payment from CEPI partner(s), we reclassify the advanced payments from long-term deferred revenue to accrued liabilities. As of December 31, 2021, advance payments totaling $5.4 million were included in other long-term liabilities in our consolidated balance sheets. As of December 31, 2021, advance payments totaling $128.8 million was recorded as CEPI accrual in our consolidated balance sheets.

As of December 31, 2021, the aggregate principal amount of our Convertible Notes was $225.5 million, excluding debt discount of $5.0 million. The Convertible Notes bear interest at a rate of 2.50% per year, payable semiannually in arrears on May 15 and November 15 of each year, beginning on November 15, 2021. The Convertible Notes mature on May 15, 2026, unless converted, redeemed or repurchased in accordance with their terms prior to such date.

For the year ended December 31, 2021, we received net cash proceeds of $28.2 million resulting from sales of 2,878,567 shares of our common stock pursuant to a 2020 At Market Sales Agreement with Cowen and Company, LLC ("2020 ATM Agreement"). All of these shares were sold during the three months ended March 31, 2021. As of December 31, 2021, we had $120.5 million remaining under the 2020 ATM Agreement.

Prior to January 1, 2021, we incurred net losses in each year since our inception. For the year ended December 31, 2021, we recorded net income of $76.7 million. We cannot be certain that sales of our products, and the revenue from our other activities are sustainable. Further, we expect to continue to incur substantial expenses as we continue to invest in commercialization of HEPLISAV-B, development of our CpG 1018 adjuvant and clinical trials and other development. If we cannot generate a sufficient amount of revenue from product sales, we will need to finance our operations through strategic alliance and licensing arrangements and/or future public or private debt and equity financings. Raising additional funds through the issuance of equity or debt securities could result in dilution to our existing stockholders, increased fixed payment obligations, or both. In addition, these securities may have rights senior to those of our common stock and could include covenants that would restrict our operations.

Our ability to raise additional capital in the equity and debt markets, should we choose to do so, is dependent on a number of factors, including, but not limited to, the market demand for our common stock, which itself is subject to a number of development and business risks and uncertainties, our creditworthiness and the uncertainty that we would be able to raise such additional capital at a price or on terms that are favorable to us. In addition, our ability to raise additional funds may be adversely impacted by deteriorating global economic conditions and the recent or future disruptions to and volatility in the credit and financial markets in the United States and worldwide resulting from the ongoing COVID-19 pandemic or otherwise. Adequate financing may not be available to us on acceptable terms, or at all. If adequate funds are not available when needed, we may need to significantly reduce our operations while we seek strategic alternatives, which could have an adverse impact on our ability to achieve our intended business objectives.

2021 versus 2020

During the year ended December 31, 2021, we generated $335.5 million of cash from our operations primarily due to our net income of $76.7 million, of which $82.4 million consisted of non-cash items which included change in fair value of warrant liability, stock-based compensation, depreciation and amortization, amortization of right-of-use assets, inventory write-off, non-cash interest expense and accretion and amortization on marketable securities. By comparison, during the year ended December 31, 2020, we used $92.3 million of cash for our operations primarily due to our net loss of $75.2 million, of which $21.6 million consisted of non-cash items which included stock-based compensation, depreciation and amortization, change in fair value of warrant liability, amortization of right-of-use assets, non-cash interest expense, amortization of

intangible assets and accretion and amortization on marketable securities. Cash provided by our operations during 2021 increased by $427.8 million. For the year ended December 31, 2021, we received advance payments from collaboration partners totaling $371.9 million to manufacture and supply CpG 1018 adjuvant for delivery in future dates. We classified such payments as deferred revenue until we satisfy our performance obligation to transfer control of CpG 1018 adjuvant to collaboration partners. We invested approximately $130.2 million in prepaid manufacturing. We expect prepaid manufacturing to be converted into CpG 1018 adjuvant inventory within the next twelve months. Net cash provided by operating activities is also impacted by changes in our operating assets and liabilities due to timing of cash receipts and expenditures.

During the year ended December 31, 2021, net cash provided by investing activities was $14.2 million compared to $26.5 million of cash used in investing activities for the year ended December 31, 2020. Cash provided by investing activities during the year ended December 31, 2021 included $22.7 million of net proceeds from maturities of marketable securities during 2021 compared to $22.3 million of net purchases of marketable securities during 2020. During the year ended December 31, 2020, we paid $7.0 million of sublicense payment to Merck. In addition, during the year ended December 31, 2021 and 2020, we received $1 million and $6.9 million, respectively, from sale of SD-101 assets, net of transaction costs. Cash used in net purchases of property plant and equipment increased by $5.4 million during the year ended December 31, 2021 compared to the same period in 2020. The increase was, primarily, due to the ongoing manufacturing facility expansion project in Düsseldorf during the year ended December 31, 2021.

During the year ended December 31, 2021 and 2020, net cash provided by financing activities was $55.8 million and $109.5 million, respectively. Cash provided by financing activities for the year ended December 31, 2021 included net proceeds of $219.8 million from the issuance of our Convertible Notes, $28.2 million from our 2020 ATM Agreement, $17.8 million from warrants exercised, $7.4 million from options exercised and employee stock purchase plan, offset by $190.2 million repayment of our long-term debt and $27.2 million purchases of capped call options. Cash provided by financing activities for the year ended December 31, 2020 included net proceeds of $75.4 million from our underwritten public offering in May 2020, $32.3 million from our, now terminated, 2017 ATM Agreement and $0.8 million from our 2020 ATM Agreement.

Contractual Obligations

We lease our facilities in Emeryville, California and Düsseldorf, Germany.

In July 2019, we entered into an agreement to sublease 23,976 square feet of office space located at 2100 Powell Street, Emeryville, California for our new global headquarters. This sublease agreement will continue until June 30, 2022. As of December 31, 2021, we are obligated to make lease payments totaling $0.6 million within the next 12 months, plus any operating expenses and taxes.

In September 2018, we entered into an agreement to lease 75,662 square feet of laboratory and office space located at 5959 Horton Street, Emeryville, California at the rate of $4.75 per square foot, paid on a monthly basis (“Horton Street Lease”). As of December 31, 2021, we are obligated to make lease payments totaling $4.7 million within the next 12 months and $44.3 million beyond the next 12 months, plus any operating expenses and taxes over the Horton Street Lease term. In July 2019, we entered into an agreement to sublease the entire 75,662 square feet to a third party at the rate of $5.50 per square foot, paid on a monthly basis (“Horton Street Sublease”). Both the Horton Street Lease and the Horton Street Sublease will continue until March 31, 2031.

In September 2021, we entered into a commercial lease agreement in Düsseldorf, Germany (the "New Düsseldorf Lease"). The New Düsseldorf Lease is for the same space that we currently lease in Düsseldorf, Germany and with the same landlord. Our existing lease will continue until December 31, 2021, at which point the New Düsseldorf Lease will be in effect. As of December 31, 2021, we are obligated to make lease payments totaling $0.5 million within the next 12 months and $7.3 million beyond the next 12 months, plus any operating expenses and taxes over the lease term.

In May 2021, we issued $200.0 million aggregate principal amount of 2.50% convertible senior notes due 2026 in a private placement. The purchasers also partially exercised their option to purchase additional Convertible Notes in May 2021 and we issued an additional $25.5 million of the Convertible Notes. As of December 31, 2021, the aggregate principal amount of our Convertible Notes was $225.5 million, excluding debt discount of $5.0 million. The Convertible Notes bear interest at a rate of 2.50% per year, payable semiannually in arrears on May 15 and November 15 of each year, beginning on November 15, 2021. The Convertible Notes mature on May 15, 2026, unless converted, redeemed or repurchased in accordance with their terms prior to such date.

In May 2021, we repaid the principal on the term loans (the "Term Loans") under the term loan agreement ("Loan Agreement") with CRG Servicing LLC in full. With the full repayment of the Term Loans, all security interests, covenants, liens and encumbrances under the Loan Agreement were permanently released.

In November 2013, we entered into a Commercial Manufacturing and Supply Agreement with Baxter Pharmaceutical Solutions LLC ("Baxter") that was amended in September 2021 (as amended, the "Baxter Agreement"). Baxter provides formulation, fill and finish services and produces pre-filled syringes ("PFS") of HEPLISAV-B for commercial use. Pursuant to the Baxter Agreement, we are obligated to purchase an annual minimum number of batches of PFS for each of the next five calendar years, and there are certain limits on the number of batches that Baxter is required to produce. As of December 31, 2021, our aggregate minimum commitment under the Baxter Agreement was $3.2 million within the next 12 months and $43.4 million beyond the next 12 months, which is included in the material non-cancelable purchase commitments below.

We have entered into material purchase commitments with commercial manufacturers for the supply of HEPLISAV-B and CpG 1018 adjuvant. As of December 31, 2021, our material non-cancelable purchase commitments, for the supply of HEPLISAV-B and CpG 1018 adjuvant totaled $52.1 million within the next 12 months.

In addition to the non-cancelable commitments noted above, we have entered into contractual arrangements that obligate us to make payments to the contractual counterparties upon the occurrence of future events. In addition, in the normal course of operations, we have entered into license and other agreements and intend to continue to seek additional rights relating to compounds or technologies in connection with our discovery, manufacturing and development programs. Under the terms of the agreements, we may be required to pay future up-front fees, milestones and royalties on net sales of products originating from the licensed technologies, if any, or other payments contingent upon the occurrence of future events that cannot reasonably be estimated.

We also rely on and have entered into agreements with research institutions, contract research organizations and clinical investigators as well as clinical material manufacturers. These agreements are terminable by us upon written notice. Generally, we are liable only for actual effort expended by the organizations at any point in time during the contract through the notice period.

In conjunction with our agreement with Holdings in November 2009, we agreed to make contingent cash payments to Holdings equal to 50% of the first $50 million from any upfront, pre-commercialization milestone or similar payments received by us from any agreement with any third party with respect to the development and/or commercialization of cancer and hepatitis C therapies originally licensed to Symphony Dynamo, Inc., including SD-101. In July 2020, we sold assets related to our SD-101 compound to TriSalus. We are obligated to pay Holdings 50% of the contingent pre-commercialization milestone payments that we may receive under the Asset Purchase Agreement. We paid $2.5 million to Holdings in August 2020 and $0.5 million in September 2021. No liability has been recorded under this agreement as of December 31, 2021.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Quantitative and Qualitative Disclosure about Market Risk

Interest Rate Risk

We are subject to interest rate risk. Our investment portfolio is maintained in accordance with our investment policy, which defines allowable investments, specifies credit quality standards and limits the credit exposure of any single issuer. The primary objective of our investment activities is to preserve principal and, secondarily, to maximize income we receive from our investments without significantly increasing risk. Some of the securities that we invest in may have market risk. This means that a change in prevailing interest rates may cause the principal amount of the investment to fluctuate. To minimize this risk, we maintain our portfolio of cash equivalents and investments in short-term money market funds, U.S. government agency securities, U.S. treasuries and corporate debt securities. We do not invest in auction rate securities or securities collateralized by home mortgages, mortgage bank debt or home equity loans. We do not have derivative financial instruments in our investment portfolio. To assess our risk, we calculate that if interest rates were to rise or fall from current levels by 100 basis points or by 125 basis points, the pro forma change in fair value of investments would be $1.2 million or $1.5 million, respectively.

Due to the short duration and nature of our cash equivalents and marketable securities, as well as our intention to hold the investments to maturity, we do not expect any material loss with respect to our investment portfolio.

Foreign Currency Risk

We have certain investments outside the U.S. for the operations of Dynavax GmbH and Dynavax India LLP with exposure to foreign exchange rate fluctuations. The cumulative translation adjustment reported in the consolidated balance sheet as of December 31, 2021 was a $2.3 million loss primarily related to the translation of Dynavax GmbH assets, liabilities and operating results from Euros to U.S. dollars. As of December 31, 2021, the effect of our exposure to these exchange rate fluctuations has not been material, and we do not expect it to become material in the foreseeable future. We do not hedge our foreign currency exposures and have not used derivative financial instruments for speculation or trading purposes.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

Report of Independent Registered Public Accounting Firm

To the Stockholders and the Board of Directors of Dynavax Technologies Corporation

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Dynavax Technologies Corporation (the Company) as of December 31, 2021 and 2020, the related consolidated statements of operations, comprehensive income (loss), stockholders' equity and cash flows for each of the three years in the period ended December 31, 2021, and the related notes (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2021 and 2020, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2021, in conformity with U.S. generally accepted accounting principles.

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, 2021, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework), and our report dated February 28, 2022 expressed an unqualified opinion thereon.

Basis for Opinion

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

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

Critical Audit Matter

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

Reserves for returns on product revenue

Description of the Matter

During the year ended December 31, 2021, the Company's net product revenues for HEPLISAV-B were $61.9 million. As explained in Note 2 of the consolidated financial statements, revenue from product sales includes estimates of variable consideration for which reserves are established, including reserves for product returns.

Auditing the Company's measurement of reserves for HEPLISAV-B product returns under its contracts with wholesalers and specialty distributors (collectively, "Customers") was challenging because (1) the calculation involves management assumptions about inventory remaining in the distribution channel (i.e., units held by Customers) as of the balance sheet date that could be subject to return in future periods under the Company's returns policy, and (2) the Company has limited returns history on which to base its assumptions.

How We Addressed the Matter in Our Audit

We obtained an understanding, evaluated the design and tested the operating effectiveness of internal controls that identified risks related to the Company's process used to determine reserves for returns on product revenue. For example, we tested controls over management's review of the completeness and accuracy of the data used in the process, the assumptions about Customers reorder patterns and units in the channel as of the balance sheet date.

To test the Company's reserves for returns on product revenue, our audit procedures included, among other procedures, testing the accuracy and completeness of the underlying data used in the calculations and evaluating the assumptions used by management to estimate its reserves. To test management's assumptions, we inspected agreements with significant Customers to validate the rights of return policy, obtained written representations from members of the commercial and sales functions regarding changes to the terms and conditions reported to the legal and accounting departments, examined credit memos issued during and after year end for unusual items or trends not consistent with the Company's analysis of product returns, performed revenue cutoff testing at period end to assess whether there were unusual trends that should have been considered in the Company analysis of product returns, compared the shipment reports to Customers sell through information to assess the extent of inventory in the distribution channel and examined Customers reorder information. We also performed sensitivity analyses over the Company's return rate to assess the effect of changes in assumptions.

/s/ Ernst & Young LLP

We have served as the Company's auditor since 2002.
San Francisco, California
February 28, 2022

DYNAVAX TECHNOLOGIES CORPORATION

CONSOLIDATED BALANCE SHEETS

(In thousands, except per share amounts)

	December 31,	
	2021	**2020**
Assets		
Current assets:		
Cash and cash equivalents	$ 436,189	$ 32,073
Marketable securities available-for-sale	109,761	132,963
Accounts receivables, net	116,216	22,305
Other receivables	15,600	356
Inventories, net	61,335	63,689
Prepaid manufacturing	159,655	29,423
Prepaid expenses and other current assets	73,764	9,206
Total current assets	972,520	290,015
Property and equipment, net	35,020	30,567
Operating lease right-of-use assets	25,964	26,583
Goodwill	2,125	2,297
Restricted cash	219	237
Other assets	3,398	3,573
Total assets	$ 1,039,246	$ 353,272
Liabilities and stockholders' equity		
Current liabilities:		
Accounts payable	$ 2,600	$ 3,312
Accrued research and development	4,688	2,805
CEPI accrual (see Note 9)	128,848	-
Accrued liabilities (see Note 7)	49,796	19,099
Warrant liability	18,016	10,736
Deferred revenue	349,864	38,212
Other current liabilities	2,590	3,247
Total current liabilities	556,402	77,411
Long-term debt, net of debt discount of $1,094 at December 31, 2020	-	179,811
Convertible Notes, net of debt discount of $5,010 at December 31, 2021 (see Note 10)	220,490	-
Long-term portion of lease liabilities	34,316	34,789
Other long-term liabilities	5,664	2,568
Total liabilities	816,872	294,579
Commitments and contingencies (Note 8)		
Stockholders' equity:		
Preferred stock: $0.001 par value	-	-
Authorized: 5,000 shares; Issued and outstanding:		
Series B Convertible Preferred Stock — no shares and 4 shares at December 31, 2021 and 2020, respectively		-
Common stock: $0.001 par value; 278,000 shares authorized at December 31, 2021 and 2020; 122,945 shares and 110,190 shares issued and outstanding at December 31, 2021 and 2020, respectively	123	110
Additional paid-in capital	1,441,868	1,352,374
Accumulated other comprehensive (loss) gain	(2,266)	273
Accumulated deficit	(1,217,351)	(1,294,064)
Total stockholders' equity	222,374	58,693
Total liabilities and stockholders' equity	$ 1,039,246	$ 353,272

See accompanying notes.

DYNAVAX TECHNOLOGIES CORPORATION

CONSOLIDATED STATEMENTS OF OPERATIONS

(In thousands, except per share amounts)

	Year Ended December 31,		
	2021	**2020**	**2019**
Revenues:			
Product revenue, net	$ 437,099	$ 39,307	$ 34,644
Other revenue	2,343	7,244	575
Total revenues	439,442	46,551	35,219
Operating expenses:			
Cost of sales - product	173,572	11,410	10,172
Cost of sales - amortization of intangible assets	-	2,500	9,217
Research and development	32,228	28,607	62,331
Selling, general and administrative	100,156	79,256	74,986
Gain on sale of assets (Note 8)	(1,000)	(6,851)	-
Restructuring	-	-	13,356
Total operating expenses	304,956	114,922	170,062
Income (loss) from operations	134,486	(68,371)	(134,843)
Other income (expense):			
Interest income	140	1,260	3,370
Interest expense	(11,176)	(19,062)	(16,977)
Sublease income	7,735	7,706	2,619
Loss on debt extinguishment (Note 11)	(5,232)	-	-
Change in fair value of warrant liability (Note 14)	(49,354)	4,124	(7,500)
Other	922	(897)	731
Income (loss) before income taxes	77,521	(75,240)	(152,600)
Provision for income taxes	(808)	-	-
Net income (loss)	76,713	(75,240)	(152,600)
Undistributed earnings allocated to participating securities	(4,569)	-	-
Preferred stock deemed dividend	-	-	(3,267)
Net income (loss) allocable to common stockholders	$ 72,144	$ (75,240)	$ (155,867)
Net income (loss) per share allocable to common stockholders			
Basic	$ 0.62	$ (0.75)	$ (2.16)
Diluted	$ 0.57	$ (0.78)	$ (2.16)
Weighted-average shares used in computing net income (loss) per share allocable to common stockholders:			
Basic	116,264	100,753	72,024
Diluted	133,006	101,504	72,024

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)

(In thousands)

	Year Ended December 31,		
	2021	**2020**	**2019**
Net income (loss)	$ 76,713	$ (75,240)	$ (152,600)
Other comprehensive (loss) income, net of tax:			
Reclassification of realized gain on available-for-sale securities recognized in interest income	-	(21)	-
Change in unrealized gain on marketable securities available-for-sale	(30)	(20)	140
Cumulative foreign currency translation adjustments	(2,509)	2,701	(512)
Total other comprehensive (loss) income	(2,539)	2,660	(372)
Total comprehensive income (loss)	$ 74,174	$ (72,580)	$ (152,972)

See accompanying notes.

DYNAVAX TECHNOLOGIES CORPORATION

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY

(In thousands)

	Common Stock		Preferred Stock					
	Shares	Par Amount	Shares	Par Amount	Additional Paid-In Capital	Accumulated Other Comprehensive (Loss) Income	Accumulated Deficit	Total Stockholders' Equity
Balances at December 31, 2018	62,862	$ 63	-	$ -	$ 1,131,241	$ (2,015)	$ (1,066,224)	$ 63,065
Issuance of common stock upon exercise of stock options and restricted stock awards, net	975	1	-	-	1	-	-	2
Issuance of common stock under Employee Stock Purchase Plan	122	-	-	-	565	-	-	565
Issuance of common stock, net of issuance costs, in conjunction with an underwritten public offering and an At Market Sales Agreement (see Note 14)	19,912	20	-	-	60,093	-	-	60,113
Issuance of Series B Convertible Preferred Stock, net of issuance costs, in conjunction with an underwritten public offering (see Note 14)	-	-	5	-	12,061	-	-	12,061
Stock compensation expense	-	-	-	-	25,456	-	-	25,456
Total other comprehensive loss	-	-	-	-	-	(372)	-	(372)
Net loss	-	-	-	-	-	-	(152,600)	(152,600)
Balances at December 31, 2019	83,871	$ 84	5	$ -	$ 1,229,417	$ (2,387)	$ (1,218,824)	$ 8,290
Conversion of Preferred Stock	700	1	(1)	-	-	-	-	1
Issuance of common stock upon exercise of stock options and restricted stock awards, net	1,209	1	-	-	288	-	-	289
Issuance of common stock under Employee Stock Purchase Plan	195	-	-	-	672	-	-	672
Issuance of common stock, net of issuance costs, in conjunction with an underwritten public offering and an At Market Sales Agreement (see Note 14)	24,215	24	-	-	108,513	-	-	108,537
Stock compensation expense	-	-	-	-	13,484	-	-	13,484
Total other comprehensive loss	-	-	-	-	-	2,660	-	2,660
Net loss	-	-	-	-	-	-	(75,240)	(75,240)
Balances at December 31, 2020	110,190	$ 110	4	$ -	$ 1,352,374	$ 273	$ (1,294,064)	$ 58,693
Conversion of preferred stock	4,140	4	(4)	-	(4)	-	-	-
Issuance of common stock upon exercise of stock options and restricted stock awards, net	1,560	2	-	-	6,575	-	-	6,577
Issuance of common stock under Employee Stock Purchase Plan	217	-	-	-	841	-	-	841
Issuance of common stock upon exercise of warrants	3,959	4	-	-	59,884	-	-	59,888
Issuance of common stock, net of issuance costs, in conjunction with an At Market Sales Agreement (see Note 14)	2,879	3	-	-	28,153	-	-	28,156
Issuance of capped call options (see Note 10)	-	-	-	-	(27,240)	-	-	(27,240)
Stock compensation expense	-	-	-	-	21,285	-	-	21,285
Total other comprehensive loss	-	-	-	-	-	(2,539)	-	(2,539)
Net income	-	-	-	-	-	-	76,713	76,713
Balances at December 31, 2021	122,945	$ 123	-	$ -	$ 1,441,868	$ (2,266)	$ (1,217,351)	$ 222,374

See accompanying notes.

DYNAVAX TECHNOLOGIES CORPORATION

CONSOLIDATED STATEMENTS OF CASH FLOWS

(In thousands)

	Year Ended December 31,		
	2021	**2020**	**2019**
Operating activities			
Net income (loss)	$ 76,713	$ (75,240)	$ (152,600)
Adjustments to reconcile net income (loss) to net cash provided by operating activities:			
Depreciation and amortization	4,296	4,273	8,938
Amortization of right-of-use assets	2,715	2,562	3,375
Inventory write-off	2,588	-	-
Loss (gain) on disposal of property and equipment and from lease termination	47	(98)	18
Amortization of premiums (accretion of discounts) on marketable securities	470	535	(1,462)
Realized gain on available-for-sale securities	-	(57)	-
Loss on debt extinguishment	5,232	-	-
Change in fair value of warrant liability	49,354	(4,124)	7,500
Stock compensation expense	21,285	13,484	25,456
Cost of sales - amortization of intangible assets	-	2,500	9,217
Non-cash interest expense	1,608	2,542	4,973
Tenant improvements provided by the landlord	-	1,137	6,999
Gain on sale of assets	(1,000)	(6,851)	-
Changes in operating assets and liabilities:			
Accounts and other receivables, net	(109,155)	(13,775)	(5,182)
Inventories, net	(234)	(22,357)	(22,310)
Prepaid manufacturing	(130,232)	(29,423)	-
Prepaid expenses and other current assets	(64,558)	(1,826)	(1,278)
Other assets	175	(229)	1,632
Accounts payable	(767)	(3,448)	4,848
CEPI accrual (see Note 9)	128,848	-	-
Lease liabilities	(3,234)	(2,872)	(2,000)
Deferred revenue	311,652	38,212	-
Accrued and other liabilities	39,725	2,804	(9,376)
Net cash provided by (used in) operating activities	335,528	(92,251)	(121,252)
Investing activities			
Acquisition of technology licenses	-	(7,000)	(7,000)
Purchases of marketable securities	(164,928)	(201,786)	(215,191)
Proceeds from maturities and redemptions of marketable securities	187,630	148,565	201,810
Proceeds from sales of marketable securities	-	30,910	-
Purchases of property and equipment, net	(9,477)	(4,072)	(22,401)
Proceeds from sale of assets, net of transaction costs	1,000	6,851	-
Net cash provided by (used in) investing activities	14,225	(26,532)	(42,782)
Financing activities			
Proceeds from long-term debt, net	-	-	74,250
Proceeds from issuances of common stock, net	28,156	108,538	65,948
Proceeds from issuances of preferred stock, net	-	-	13,586
Proceeds from issuance of Convertible Notes, net	219,822	-	-
Purchases of capped call options	(27,240)	-	-
Repayment of long-term debt	(190,194)	-	-
Proceeds from warrants exercises	17,814	-	-
Proceeds from exercise of stock options and restricted stock awards, net	6,577	289	2
Proceeds from Employee Stock Purchase Plan	841	672	565
Net cash provided by financing activities	55,776	109,499	154,351
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(1,431)	1,494	(184)
Net increase (decrease) in cash, cash equivalents and restricted cash	404,098	(7,790)	(9,867)
Cash, cash equivalents and restricted cash at beginning of year	32,310	40,100	49,967
Cash, cash equivalents and restricted cash at end of year	$ 436,408	$ 32,310	$ 40,100
Supplemental disclosure of cash flow information			
Cash paid during the year for income taxes	$ 1,312	$ -	$ -
Cash paid during the year for interest	$ 9,815	$ 16,541	$ 12,147
Non-cash investing and financing activities:			
Purchases of property and equipment, not yet paid	$ 591	$ 361	$ 2,698
Proceeds allocated to warrant liability at issuance	$ -	$ -	$ 7,360
Right-of-use assets obtained in exchange for operating lease liabilities	$ 2,468	$ -	$ 40,626

See accompanying notes.

DYNAVAX TECHNOLOGIES CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. Organization

Dynavax Technologies Corporation (“we,” “our,” “us,” “Dynavax” or the “Company”), is a commercial stage biopharmaceutical company focused on developing and commercializing innovative vaccines. Our first marketed product, HEPLISAV-B® (Hepatitis B Vaccine (Recombinant), Adjuvanted) is approved in the United States and European Union for prevention of infection caused by all known subtypes of hepatitis B virus in adults age 18 years and older. We also manufacture and sell CpG 1018®, the adjuvant used in HEPLISAV-B. We are working to develop CpG 1018 as a premier vaccine adjuvant through research collaborations and partnerships. Current collaborations are focused on adjuvanted vaccines for COVID-19, plague, Tdap, seasonal influenza, universal influenza and shingles. We reincorporated in Delaware in 2000.

2. Summary of Significant Accounting Policies

Basis of Presentation and Principles of Consolidation

The consolidated financial statements are prepared in accordance with U.S. generally accepted accounting principles (“GAAP”) and include our accounts and those of our wholly-owned subsidiaries, Dynavax GmbH located in Düsseldorf, Germany and Dynavax India LLP in India. All significant intercompany accounts and transactions among the entities have been eliminated from the consolidated financial statements. We operate in one business segment: discovery, development and commercialization of innovative vaccines.

Liquidity and Financial Condition

As of December 31, 2021, we had cash, cash equivalents and marketable securities of $546.0 million. In May 2021, we issued $225.5 million in 2.50% convertible senior notes due 2026 (“Convertible Notes”). We used approximately $190.2 million of the net proceeds to retire our previous loan agreement with CRG Servicing LLC ("Loan Agreement") (see Note 11) and $27.2 million of the net proceeds to pay the costs of the capped call transactions (the “Capped Calls”) (see Note 10). As of December 31, 2021, the aggregate principal amount of our Convertible Notes was $225.5 million, excluding debt discount of $5.0 million (see Note 10). The Convertible Notes mature on May 15, 2026, unless converted, redeemed or repurchased in accordance with their terms prior to such date.

Prior to January 1, 2021, we incurred net losses in each year since our inception. For the year ended December 31, 2021, we recorded net income of $76.7 million. We cannot be certain that sales of our products, and the revenue from our other activities are sustainable. Further, we expect to continue to incur substantial expenses as we continue to invest in commercialization of HEPLISAV-B, development and procurement of our CpG 1018 adjuvant, and clinical trials and other development. If we cannot generate a sufficient amount of revenue from product sales, we will need to finance our operations through strategic alliance and licensing arrangements and/or future public or private debt and equity financings. Adequate financing may not be available to us on acceptable terms, or at all.

We currently anticipate that our cash, cash equivalents and short-term marketable securities as of December 31, 2021, and anticipated revenues from HEPLISAV-B and CpG 1018 will be sufficient to fund our operations for at least the next 12 months from the date of this filing.

Our ability to raise additional capital in the equity and debt markets, should we choose to do so, is dependent on a number of factors, including, but not limited to, the market demand for our common stock, which itself is subject to a number of development and business risks and uncertainties, our creditworthiness and the uncertainty that we would be able to raise such additional capital at a price or on terms that are favorable to us. In addition, our ability to raise additional funds may be adversely impacted by deteriorating global economic conditions and the recent or future disruptions to and volatility in the credit and financial markets in the United States and worldwide resulting from the ongoing COVID-19 pandemic or otherwise. Raising additional funds through the issuance of equity or debt securities could result in dilution to our existing stockholders, increased fixed payment obligations, or both. In addition, these securities may have rights senior to those of our common stock and could include covenants that would restrict our operations.

Use of Estimates

The preparation of financial statements in conformity with GAAP requires management to make informed estimates and assumptions that affect the amounts reported in the consolidated financial statements and accompanying notes. Management’s estimates are based on historical information available as of the date of the consolidated financial statements

and various other assumptions we believe are reasonable under the circumstances. Actual results could differ materially from these estimates.

Foreign Currency Translation

We consider the local currency to be the functional currency for our international subsidiaries, Dynavax GmbH and Dynavax India LLP. Accordingly, assets and liabilities denominated in this foreign currency are translated into U.S. dollars using the exchange rate in effect on the balance sheet date. Revenues and expenses are translated at average exchange rates prevailing during the year. Currency translation adjustments arising from period to period are charged or credited to accumulated other comprehensive income (loss) in stockholders' equity.

As of December 31, 2021 and 2020, the cumulative translation adjustments balance was $(2.3) million and $0.2 million, respectively, primarily related to the translation of Dynavax GmbH assets, liabilities and operating results from Euros to U.S. dollars. For the years ended December 31, 2021, 2020 and 2019, we reported an unrealized (loss) gain of $(2.5) million, $2.7 million and $(0.5) million, respectively. Realized gains and losses resulting from currency transactions are included in other income (expense) in the consolidated statements of operations. For the years ended December 31, 2021, 2020 and 2019, we reported a gain (loss) of $0.9 million, $(0.8) million and $0.2 million, respectively, resulting from currency transactions in our consolidated statements of operations.

Cash, Cash Equivalents and Marketable Securities

We consider all liquid investments purchased with an original maturity of three months or less and that can be liquidated without prior notice or penalty to be cash equivalents. Management determines the appropriate classification of marketable securities at the time of purchase. In accordance with our investment policy, we invest in short-term money market funds, U.S. treasuries, U.S. government agency securities and corporate debt securities. We believe these types of investments are subject to minimal credit and market risk.

We have classified our entire investment portfolio as available-for-sale and available for use in current operations and accordingly have classified all investments as short-term. Available-for-sale securities are carried at fair value based on inputs that are observable, either directly or indirectly, such as quoted market prices for similar securities; quoted prices in markets that are not active; or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the securities, with unrealized gains and losses included in accumulated other comprehensive loss in stockholders' equity. Realized gains and losses and declines in value, if any, judged to be other than temporary on available-for-sale securities are included in interest income or expense. The cost of securities sold is based on the specific identification method. Management assesses whether declines in the fair value of investment securities are other than temporary. In determining whether a decline is other than temporary, management considers the following factors:

- whether the investment has been in a continuous realized loss position for over 12 months;
- the duration to maturity of our investments;
- our intention and ability to hold the investment to maturity and if it is not more likely than not that we will be required to sell the investment before recovery of the amortized cost bases;
- the credit rating, financial condition and near-term prospects of the issuer; and
- the type of investments made.

To date, there have been no declines in fair value that have been identified as other than temporary.

Concentration of Credit Risk and Other Risks and Uncertainties

Financial instruments that are subject to concentration of credit risk consist primarily of cash equivalents, marketable securities and accounts receivable.

Our policy is to invest cash in institutional money market funds and marketable securities of the U.S. government and corporate issuers with high credit quality to limit the amount of credit exposure. We currently maintain a portfolio of cash equivalents and marketable securities in a variety of securities, including short-term money market funds, U.S. treasuries, U.S. government agency securities and corporate debt securities. We have not experienced any losses on our cash equivalents and marketable securities.

Our accounts receivable balance consists, primarily, of amounts due from product sales. Accounts receivable are recorded net of reserves for chargebacks, distribution fees, trade discounts and doubtful accounts. We estimate our allowance for doubtful accounts based on an evaluation of the aging of our receivables. Accounts receivable balances are written off against the allowance when it is probable that the receivable will not be collected. To date, we have not recorded any allowance for doubtful accounts. As of December 31, 2021 and 2020, three customers collectively represented approximately 76% and 86% of our HEPLISAV-B trade receivable balance, respectively. As of December 31, 2021 and 2020, one customer represented approximately 94% and 100% of our CpG 1018 trade receivable balance, respectively.

Our product candidates will require approval from the United States Food and Drug Administration ("FDA") and foreign regulatory agencies before commercial sales can commence. There can be no assurance that our products will receive any of these required approvals. The denial or delay of such approvals may have a material adverse impact on our business and may impact our business in the future. In addition, after the approval of HEPLISAV-B by the FDA, there is still an ongoing risk of adverse events that did not appear during the drug approval process.

We are subject to risks common to companies in the biopharmaceutical industry, including, but not limited to, new technological innovations, clinical development risk, establishment of appropriate commercial partnerships, protection of proprietary technology, compliance with government and environmental regulations, uncertainty of market acceptance of product candidates, product liability, the volatility of our stock price and the need to obtain additional financing.

As of December 31, 2021 and 2020, 43% and 57%, respectively, of our long-lived assets were located in the United States and the remaining long-lived assets were located in Germany.

Inventories, net

HEPLISAV-B Inventories, net

Inventory is stated at the lower of cost or estimated net realizable value, on a first-in, first-out, or FIFO, basis. We primarily use actual costs to determine our cost basis for inventories. Our assessment of market value requires the use of estimates regarding the net realizable value of our inventory balances, including an assessment of excess or obsolete inventory. We determine excess or obsolete inventory based on multiple factors, including an estimate of the future demand for our products, product expiration dates and current sales levels. Our assumptions of future demand for our products are inherently uncertain and if we were to change any of these judgments or estimates, it could cause a material increase or decrease in the amount of inventory reserves that we report in a particular period. Additionally, for the year ended December 31, 2021, due to the COVID-19 pandemic and its prolonged impact on vaccine utilization and corresponding revisions to our sales forecast, we recorded an approximately $2.6 million write-off to cost of sales – product associated with HEPLISAV-B slow moving short-dated inventory that had been manufactured prior to the beginning of the COVID-19 pandemic. For the year ended December 31, 2020 and 2019, there were no inventory write-offs recognized.

We consider regulatory approval of product candidates to be uncertain and product manufactured prior to the required regulatory approval may not be sold unless regulatory approval is obtained. As such, the manufacturing costs for product candidates incurred prior to regulatory approval are not capitalized as inventory but are expensed as research and development costs. We begin capitalization of these inventory related costs once regulatory approval is obtained.

HEPLISAV-B was approved by the United States Food and Drug Administration (“FDA”) on November 9, 2017, at which time we began to capitalize inventory costs associated with the vial presentation of HEPLISAV-B. In March 2018, we received regulatory approval of the pre-filled syringe (“PFS”) presentation of HEPLISAV-B. Prior to FDA approval of HEPLISAV-B, all costs related to the manufacturing of HEPLISAV-B that could potentially be available to support the commercial launch of our products, were charged to research and development expense in the period incurred as there was no alternative future use. Prior to regulatory approval of PFS, costs associated with resuming operating activities at the Düsseldorf manufacturing facility were also included in research and development expense. Subsequent to regulatory approval of PFS, costs associated with resuming manufacturing activities at the Düsseldorf facility were included in cost of sales – product, until commercial production resumed in mid-2018 at which time these costs were recorded as raw materials inventory.

CpG 1018 Inventories, net

Inventory is stated at the lower of cost or estimated net realizable value, on a first-in, first-out, or FIFO, basis. We primarily use actual costs to determine our cost basis for inventories. Our assessment of market value requires the use of estimates regarding the net realizable value of our inventory balances, including an assessment of excess or obsolete

inventory. We determine excess or obsolete inventory based on multiple factors, including an estimate of the future demand for our products, product expiration dates and current sales levels. Our assumptions of future demand for our products are inherently uncertain and if we were to change any of these judgments or estimates, it could cause a material increase or decrease in the amount of inventory reserves that we report in a particular period. For the year ended December 31, 2021 and 2020, there were no inventory reserves recognized.

Long-Lived Assets

Property and equipment are recorded at cost. Depreciation is computed using the straight-line method over the estimated useful lives of the respective assets. Additions, major renewals and improvements are capitalized and repair and maintenance costs are charged to expense as incurred. Leasehold improvements are amortized over the remaining life of the initial lease term or the estimated useful lives of the assets, whichever is shorter.

We evaluate the carrying value of long-lived assets, whenever events or changes in business circumstances or our planned use of long-lived assets indicate, based on undiscounted future operating cash flows, that their carrying amounts may not be fully recoverable or that their useful lives are no longer appropriate. When an indicator of impairment exists, undiscounted future operating cash flows of long-lived assets are compared to their respective carrying value. If the carrying value is greater than the undiscounted future operating cash flows of long-lived assets, the long-lived assets are written down to their respective fair values and an impairment loss is recorded. Fair value is determined primarily using the discounted cash flows expected to be generated from the use of assets. Significant management judgment is required in the forecast of future operating results that are used in the preparation of expected cash flows. In the third quarter of 2019, we recorded accelerated depreciation of $3.0 million related to certain long-lived assets in connection with our restructuring. See Note 17. There was no accelerated depreciation recorded during the year ended December 31, 2021 and 2020.

Leases

We determine if an arrangement includes a lease at inception. Operating leases are included in operating lease right-of-use assets, other current liabilities and long-term portion of lease liabilities in our consolidated balance sheets. Right-of-use assets represent our right to use an underlying asset during the lease term and lease liabilities represent our obligation to make lease payments arising from the lease. Operating lease right-of-use assets and liabilities are recognized at the lease commencement date based on the present value of lease payments over the lease term. In determining the net present value of lease payments, we use our incremental borrowing rate which represents an estimated rate of interest that we would have to pay to borrow equivalent funds on a collateralized basis at the lease commencement date.

The operating lease right-of-use assets also include any lease payments made and exclude any lease incentives. Our leases may include options to extend or terminate the lease which are included in the lease term when it is reasonably certain that we will exercise any such options. Lease expense is recognized on a straight-line basis over the expected lease term. We have elected not to apply the recognition requirements of ASC 842 for short-term leases. We have also elected the practical expedient to not separate lease components from non-lease components.

As lessors, we determine if an arrangement includes a lease at inception. We elected the practical expedient to not separate lease components from non-lease components. Sublease income is recognized on a straight-line basis over the expected lease term and is included in other income (expense) in our consolidated statements of operations.

Goodwill

Our goodwill balance relates to our April 2006 acquisition of Dynavax GmbH. Goodwill represents the excess purchase price over the fair value of tangible and intangible assets acquired and liabilities assumed. Goodwill is not amortized but is subject to an annual impairment test. In performing its goodwill impairment review, we assess qualitative factors to determine whether it is more likely than not that the fair value of its reporting unit is less than its carrying amount, including goodwill. The qualitative factors include, but are not limited to macroeconomic conditions, industry and market considerations, and the overall financial performance of the Company. If after assessing the totality of these qualitative factors, we determine that it is not more likely than not that the fair value of its reporting unit is less than its carrying amount, then no additional assessment is deemed necessary. Otherwise, we will proceed to perform a test for goodwill impairment. The first step involves comparing the estimated fair value of the related reporting unit against its carrying amount including goodwill. If the carrying amount exceeds the fair value, the amount by which the carrying amount exceeds the reporting unit's fair value is recorded as a charge in the consolidated statements of operations. We determined that we have only one operating segment and there are no components of that operating segment that are deemed to be separate reporting units such that we have one reporting unit for purposes of our goodwill impairment testing. We evaluate goodwill for impairment on an

annual basis and on an interim basis if events or changes in circumstances between annual impairment tests indicate that the asset might be impaired. No impairment has been identified for the years presented.

Convertible Notes

We accounted for the Convertible Notes (see Note 10) as a long-term liability equal to the proceeds received from issuance, including the embedded conversion feature, net of the unamortized debt issuance and offering costs on the consolidated balance sheets. We evaluate all conversion, repurchase and redemption features contained in a debt instrument to determine if there are any embedded features that require bifurcation as a derivative. The conversion feature is not required to be accounted for separately as an embedded derivative. We amortize debt issuance and offering costs over the contractual term of the Convertible Notes, using the effective interest method, as interest expense on the consolidated statements of operations.

Capped Calls

We evaluate financial instruments under ASC 815. In May 2021, in connection with the issuance of the Convertible Notes, we entered into the Capped Calls (see Note 10). The Capped Calls cover the same number of shares of common stock that initially underlie the Convertible Notes (subject to anti-dilution and certain other adjustments). The Capped Calls meet the definition of derivative under ASC 815. In addition, the Capped Calls meet the conditions in ASC 815 to be classified in stockholders' equity and are not subsequently remeasured as long as the conditions for the equity classification continue to be met.

Revenue Recognition

We recognize revenue when the customer obtains control of promised goods or services, in an amount that reflects the consideration which we expect to receive in exchange for those goods or services. To determine revenue recognition for arrangements that we determine are within the scope of Accounting Standards Codification ("ASC") 606, we perform the following five steps: (i) identify the contract(s) with a customer; (ii) identify the performance obligations in the contract; (iii) determine the transaction price; (iv) allocate the transaction price to the performance obligations in the contract; and (v) recognize revenue when (or as) we satisfy a performance obligation. We only apply the five-step model to contracts when it is probable that we will collect the consideration we are entitled to in exchange for the goods or services we transfer to the customer. At contract inception, once the contract is determined to be within the scope of ASC 606, we assess the goods or services promised within each contract and determine those that are performance obligations, and assess whether each promised good or service is distinct. We then recognize as revenue the amount of the transaction price that is allocated to the respective performance obligation when (or as) the performance obligation is satisfied.

Product Revenue, Net – HEPLISAV-B

We sell HEPLISAV-B to a limited number of wholesalers and specialty distributors in the U.S. (collectively, our "Customers").

Revenues from product sales are recognized when we have satisfied our performance obligation, which is the transfer of control of our product upon delivery to the Customer. The timing between the recognition of revenue for product sales and the receipt of payment is not significant. Because our standard credit terms are short-term and we expect to receive payment in less than one-year, there is no significant financing component on the related receivables. Taxes collected from Customers relating to product sales and remitted to governmental authorities are excluded from revenues. Since our performance obligation is part of a contract that has an original expected duration of one year or less, we elect not to disclose the information about our remaining performance obligations.

Overall, product revenue, net, reflects our best estimates of the amount of consideration to which we are entitled based on the terms of the contract. The amount of variable consideration is included in the net sales price only to the extent that it is probable that a significant reversal in the amount of the cumulative revenue recognized will not occur in a future period. If our estimates differ significantly from actuals, we will record adjustments that would affect product revenue, net in the period of adjustment.

Reserves for Variable Consideration

Revenues from product sales are recorded at the net sales price, which includes estimates of variable consideration such as product returns, chargebacks, discounts, rebates and other fees that are offered within contracts between us and our Customers, healthcare providers, pharmacies and others relating to our product sales. We estimate variable consideration

using either the most likely amount method or the expected value method, depending on the type of variable consideration and what method better predicts the amount of consideration we expect to receive. We take into consideration relevant factors such as industry data, current contractual terms, available information about Customers' inventory, resale and chargeback data and forecasted customer buying and payment patterns, in estimating each variable consideration. The variable consideration is recorded at the time product sales is recognized, resulting in a reduction in product revenue and a reduction in accounts receivable (if the Customer offsets the amount against its accounts receivable) or as an accrued liability (if we pay the amount through our accounts payable process). Variable consideration requires significant estimates, judgment and information obtained from external sources. The amount of variable consideration is included in the net sales price only to the extent that it is probable that a significant reversal in the amount of the cumulative revenue recognized will not occur in a future period. If our estimates differ significantly from actuals, we will record adjustments that would affect product revenue, net in the period of adjustment. If we were to change any of these judgments or estimates, it could cause a material increase or decrease in the amount of revenue that we report in a particular period. We evaluate our estimates of variable considerations including, but not limited to, product returns, chargebacks and rebates, periodically or when there is an event or change in circumstances that may indicate that our estimates may change.

Product Returns: Consistent with industry practice, we offer our Customers a limited right of return based on the product's expiration date for product that has been purchased from us. We estimate the amount of our product sales that may be returned by our Customers and record this estimate as a reduction of revenue in the period the related product revenue is recognized. We consider several factors in the estimation of potential product returns including expiration dates of the product shipped, the limited product return rights, available information about Customers' inventory and other relevant factors.

There were no material adjustments to these estimates for the years ended December 31, 2021 and 2019. During the fourth quarter of 2020, based on an analysis of historical product returns and customer ordering patterns, we decreased our returns reserve resulting in an increase in HEPLISAV-B product revenue, net of approximately $0.8 million.

Chargebacks: Our Customers subsequently resell our product to healthcare providers, pharmacies and others. In addition to distribution agreements with Customers, we enter into arrangements with qualified healthcare providers that provide for chargebacks and discounts with respect to the purchase of our product. Chargebacks represent the estimated obligations resulting from contractual commitments to sell product to qualified healthcare providers at prices lower than the list prices charged to Customers who directly purchase the product from us. Customers charge us for the difference between what they pay for the product and the ultimate selling price to the qualified healthcare providers. These reserves are established in the same period that the related revenue is recognized, resulting in a reduction of product revenue and accounts receivable. Chargeback amounts are determined at the time of resale to the qualified healthcare providers by Customers, and we issue credits for such amounts generally within a few weeks of the Customer's notification to us of the resale. Reserves for chargebacks consists of credits that we expect to issue for units that remain in the distribution channel inventories at each reporting period end that we expect will be sold to the qualified healthcare providers, and chargebacks for units that our Customers have sold to the qualified healthcare providers, but for which credits have not been issued.

Trade Discounts and Allowances: We provide our Customers with discounts which include early payment incentives that are explicitly stated in our contracts, and are recorded as a reduction of revenue in the period the related product revenue is recognized.

Distribution Fees: Distribution fees include fees paid to certain Customers for sales order management, data and distribution services. Distribution fees are recorded as a reduction of revenue in the period the related product revenue is recognized.

Rebates: Under certain contracts, customers may obtain rebates for purchasing minimum volumes of our product. We estimate these rebates based upon the expected purchases and the contractual rebate rate and record this estimate as a reduction in revenue in the period the related revenue is recognized.

Product Revenue, Net – CpG 1018

We also sell our novel adjuvant, CpG 1018, to our collaboration partners for use in their development and/or commercialization of COVID-19 vaccine. We have determined that our collaboration partners meet the definition of customers under ASC 606. Therefore, we accounted for our CpG 1018 sales under ASC 606. Revenues from product sales are recognized when we have satisfied our performance obligation, which is the transfer of control of our product to the customer. Because the timing between the recognition of revenue for product sales and the receipt of payment is less than one year, there is no significant financing component on the related receivables. Since our performance obligation is part of a

contract that has an original expected duration of one year or less, we elect not to disclose the information about our remaining performance obligations.

Overall, product revenue, net, reflects our best estimates of the amount of consideration to which we are entitled based on the terms of the contract. The amount of consideration is included in the net sales price only to the extent that it is probable that a significant reversal in the amount of the cumulative revenue recognized will not occur in a future period. If our estimates differ significantly from actuals, we will record adjustments that would affect product revenue, net in the period of adjustment.

Other Revenue

Other revenue includes grant, collaboration and manufacturing service revenue. We have entered into grant agreements, collaborative arrangements and arrangements to provide manufacturing services to other companies. Such arrangements may include promises to customers which, if capable of being distinct, are accounted for as separate performance obligations. For agreements with multiple performance obligations, we allocate estimated revenue to each performance obligation at contract inception based on the estimated transaction price of each performance obligation. Revenue allocated to each performance obligation is then recognized when we satisfy the performance obligation by transferring control of the promised good or service to the customer.

Research and Development Expenses and Accruals

Research and development expenses include personnel and facility-related expenses, outside contracted services including clinical trial costs, manufacturing and process development costs, research costs and other consulting services and non-cash stock-based compensation. Research and development costs are expensed as incurred. Amounts due under contracts with third parties may be either fixed fee or fee for service, and may include upfront payments, monthly payments and payments upon the completion of milestones or receipt of deliverables. Non-refundable advance payments under agreements are capitalized and expensed as the related goods are delivered or services are performed.

We contract with third parties to perform various clinical trial activities in the on-going development of potential products. The financial terms of these agreements are subject to negotiation, vary from contract to contract and may result in uneven payment flows to our vendors. Payments under the contracts depend on factors such as the achievement of certain events, successful enrollment of patients, and completion of portions of the clinical trial or similar conditions. Our accrual for clinical trials is based on estimates of the services received and efforts expended pursuant to contracts with clinical trial centers and clinical research organizations. We may terminate these contracts upon written notice and we are generally only liable for actual effort expended by the organizations to the date of termination, although in certain instances we may be further responsible for termination fees and penalties. We estimate research and development expenses and the related accrual as of each balance sheet date based on the facts and circumstances known to us at that time. There have been no material adjustments to the prior period accrued estimates for clinical trial activities during the years presented.

Stock-Based Compensation

Stock-based compensation expense for restricted stock units ("RSUs") and stock options is estimated at the grant date based on the award’s estimated fair value.

For awards that vest based on service conditions and market conditions, the Company uses a straight-line method to recognize compensation expense over the award’s requisite service period, assuming estimated forfeiture rates. For awards that contain performance conditions, the Company determines the appropriate amount to expense at each reporting date based on the anticipated achievement of performance targets, which requires judgement, including forecasting the achievement of future specified targets. At the date performance conditions are determined to be probable of achievement, the Company records a cumulative expense catch-up, with remaining expense amortized over the remaining service period. Throughout the performance period, the Company re-assesses the estimated performance and updates the number of performance-based awards that it believes will ultimately vest.

Fair value of restricted stock units is determined at the date of grant using the Company’s closing stock price, with the exception of performance-based RSUs with market conditions, which are measured using the Monte Carlo simulation method on the date of grant. Our determination of the fair value of stock options on the date of grant using an option-pricing model is affected by our stock price, as well as assumptions regarding a number of subjective variables. We selected the Black-Scholes option pricing model as the most appropriate method for determining the estimated fair value-based measurement of our stock options. The Black-Scholes model requires the use of subjective assumptions which determine the fair value-based measurement of stock options. These assumptions include, but are not limited to, our expected stock price volatility over the

term of the awards, and projected employee stock option exercise behaviors. In the future, as additional empirical evidence regarding these input estimates becomes available, we may change or refine our approach of deriving these input estimates. These changes could impact our fair value of stock options granted in the future. Changes in the fair value of stock awards could materially impact our operating results.

Our current estimate of volatility is based on the historical volatility of our stock price. To the extent volatility in our stock price increases in the future, our estimates of the fair value of options granted in the future could increase, thereby increasing stock-based compensation cost recognized in future periods. We derive the expected term assumption primarily based on our historical settlement experience, while giving consideration to options that have not yet completed a full life cycle. Stock-based compensation cost is recognized only for awards ultimately expected to vest. Our estimate of the forfeiture rate is based primarily on our historical experience. To the extent we revise this estimate in the future, our share-based compensation cost could be materially impacted in the period of revision. There have been no material adjustments to these estimates during the years presented.

Income Taxes

The asset and liability approach is used to recognize deferred tax assets and liabilities for the expected future tax consequences of temporary differences between the carrying amounts and the tax bases of assets and liabilities. Tax law and rate changes are reflected in income in the period such changes are enacted. We include interest and penalties related to income taxes, including unrecognized tax benefits, within income tax expense.

Our income tax returns are based on calculations and assumptions that are subject to examination by the Internal Revenue Service and other tax authorities. In addition, the calculation of our tax liabilities involves dealing with uncertainties in the application of complex tax regulations. We recognize liabilities for uncertain tax positions based on a two-step process. The first step is to evaluate the tax position for recognition by determining if the weight of available evidence indicates that it is more likely than not that the position will be sustained on audit, including resolution of related appeals or litigation processes, if any. The second step is to measure the tax benefit as the largest amount that is more than 50% likely of being realized upon settlement. While we believe we have appropriate support for the positions taken on our tax returns, we regularly assess the potential outcomes of examinations by tax authorities in determining the adequacy of our provision for income taxes. We continually assess the likelihood and amount of potential adjustments and adjust the income tax provision, income taxes payable and deferred taxes in the period in which the facts that give rise to a revision become known.

Significant judgment is required in determining our provision for income taxes, our deferred tax assets and liabilities and the valuation allowance recorded against our net deferred tax assets. Deferred tax assets and liabilities are determined using the enacted tax rates in effect for the years in which those tax assets are expected to be realized. A valuation allowance is established when it is more likely than not the future realization of all or some of the deferred tax assets will not be achieved. The evaluation of the need for a valuation allowance is performed on a jurisdiction-by-jurisdiction basis and includes a review of all available positive and negative evidence, including future reversals of existing taxable temporary differences, projected future taxable income, tax planning strategies and recent financial operations.

Based on all available evidence, both positive and negative, and the weight of that evidence to the extent such evidence can be objectively verified, we believe that recognition of the deferred tax assets arising from the above-mentioned future tax benefits is currently not more likely than not to be realized and, accordingly, we have determined a need for a full valuation allowance. Given our current earnings, we believe that, within the next twelve months, sufficient positive evidence may become available to allow us to reach a conclusion that a portion of the valuation allowance recorded against the deferred tax assets held may be reversed. A reversal would result in an income tax benefit for the quarterly and annual fiscal period in which we determine to release the valuation allowance. However, the exact timing and amount of a valuation allowance release are subject to change on the basis of the level of profitability that we actually achieve.

Restructuring

Restructuring costs are comprised of severance, other termination benefit costs, stock-based compensation expense for stock award and stock option modifications related to workforce reductions and accelerated depreciation. We recognize restructuring charges when the liability is probable and the amount is estimable. Employee termination benefits are accrued at the date management has committed to a plan of termination and affected employees have been notified of their termination date and expected severance benefits.

Recent Accounting Pronouncements

Accounting Standards Update 2019-12

In December 2019, the FASB issued Accounting Standards Update ("ASU") No. 2019-12, Simplifying the Accounting for Income Taxes (Topic 740). This ASU simplifies the accounting for income taxes by removing certain exceptions and improving consistent application in certain areas of Topic 740. The ASU is effective for annual periods beginning after December 15, 2020 with early adoption permitted. We adopted this ASU on January 1, 2021 and the adoption of this standard did not have a material impact on our consolidated financial statements.

Accounting Standards Update 2020-06

We adopted ASU No. 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 on January 1, 2021 using the modified retrospective method. This ASU simplifies the accounting for convertible instruments and requires entities to use the if-converted method for all convertible instruments in calculating diluted earnings-per-share. Entities also need to recombine instruments that were previously separated into two units of account if separation is no longer required. The adoption of this ASU did not have a material impact on our consolidated financial statements as there were no outstanding financial instruments that require recombination at January 1, 2021.

Accounting Standards Update 2016-13

In June 2016, the Financial Accounting Standards Board ("FASB") issued ASU No. 2016-13, Financial Instruments – Credit Losses (Topic 326): Measurement of Credit Losses of Financial Instruments. The standard changes the methodology for measuring credit losses on financial instruments and the timing of when such losses are recorded. For public business entities, excluding smaller reporting companies, this ASU is effective for fiscal years beginning after December 15, 2019. Furthermore, the one-time determination of whether an entity is eligible to be a smaller reporting company shall be based on an entity's most recent determination as of November 15, 2019, in accordance with SEC regulations. Because we were a smaller reporting company based on the most recent determination as of November 15, 2019, this ASU and its subsequent updates, will be effective for fiscal years beginning after December 15, 2022. We are currently evaluating the impact this standard will have on our consolidated financial statements.

3. Fair Value Measurements

We measure fair value as 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 on the measurement date. Valuation techniques used to measure fair value must maximize the use of observable inputs and minimize the use of unobservable inputs. The accounting standard describes a fair value hierarchy based on three levels of inputs, of which the first two are considered observable and the last unobservable, that may be used to measure fair value which are the following:

- Level 1—Observable inputs, such as quoted prices in active markets for identical assets or liabilities;
- Level 2—Inputs other than Level 1 that are observable, either directly or indirectly, such as quoted prices for similar assets or liabilities, quoted prices in markets that are not active or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities; and
- Level 3—Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities; therefore, requiring an entity to develop its own valuation techniques and assumptions.

Assets and liabilities are classified based on the lowest level of input that is significant to the fair value measurements. We review the fair value hierarchy classification on a quarterly basis. Changes in the ability to observe valuation inputs may result in a reclassification of levels for certain assets or liabilities within the fair value hierarchy. There were no transfers between Level 1, 2 and 3 during the years ended December 31, 2021 and 2020.

The carrying amounts of cash equivalents, accounts and other receivables, accounts payable and accrued liabilities are considered reasonable estimates of their respective fair value because of their short-term nature.

Recurring Fair Value Measurements

The following table represents the fair value hierarchy for our financial assets (cash equivalents and marketable securities) and liabilities measured at fair value on a recurring basis (in thousands):

	Level 1	Level 2	Level 3	Total
December 31, 2021				
Assets				
Money market funds	$ 429,194	$ -	$ -	$ 429,194
U.S. treasuries	-	4,004	-	4,004
U.S. government agency securities	-	26,548	-	26,548
Corporate debt securities	-	79,209	-	79,209
Total assets	$ 429,194	$ 109,761	$ -	$ 538,955
Liabilities				
Warrant liability	$ -	$ -	$ 18,016	$ 18,016

	Level 1	Level 2	Level 3	Total
December 31, 2020				
Assets				
Money market funds	$ 23,128	$ -	$ -	$ 23,128
U.S. treasuries	-	32,579	-	32,579
U.S. government agency securities	-	40,321	-	40,321
Corporate debt securities	-	61,063	-	61,063
Total assets	$ 23,128	$ 133,963	$ -	$ 157,091
Liabilities				
Warrant liability	$ -	$ -	$ 10,736	$ 10,736

Money market funds are highly liquid investments and are actively traded. The pricing information on these investment instruments is readily available and can be independently validated as of the measurement date. This approach results in the classification of these securities as Level 1 of the fair value hierarchy.

U.S. treasuries, U.S. government agency securities and corporate debt securities are measured at fair value using Level 2 inputs. We review trading activity and pricing for these investments as of each measurement date. When sufficient quoted pricing for identical securities is not available, we use market pricing and other observable market inputs for similar securities obtained from various third-party data providers. These inputs represent quoted prices for similar assets in active markets or these inputs have been derived from observable market data. This approach results in the classification of these securities as Level 2 of the fair value hierarchy.

Warrants were issued in connection with the underwritten public offering in August 2019 and are accounted for as a derivative liability at fair value. See Note 14. The fair value of the warrant liability is estimated using the Black-Scholes model which requires assumptions such as expected term, expected volatility and risk-free interest rate. These assumptions are subjective and require judgement to develop. Expected term is estimated using the full remaining contractual term of the warrants. We determine expected volatility based on our historical common stock price volatility. The warrant liability is classified as a Level 3 instrument as its value is based on unobservable inputs that are supported by little or no market activity.

As of December 31, 2021, we used the following key assumptions to estimate the fair value of warrant liability:

Number of shares	1,882,600
Expected term	0.1 years
Expected volatility	0.7
Risk-free interest rate	0.1%
Dividend yield	0%

The following table provides a summary of changes in the fair value warrant liability for year ended December 31, 2021 and 2020 (in thousands):

Balance at December 31, 2019	$ 14,860
Decrease in estimated fair value of warrant liability upon revaluation	(4,124)
Balance at December 31, 2020	$ 10,736
Decrease in fair value of warrants exercised	(4,765)
Warrants exercised	(42,074)
Increase in the estimated fair value of warrant liability upon revaluation	54,119
Balance at December 31, 2021	$ 18,016

4. Cash, Cash Equivalents, Restricted Cash and Marketable Securities

The following table provides a reconciliation of cash, cash equivalents and restricted cash reported within the consolidated balance sheets that sum to the total of the same amounts shown in the consolidated statements of cash flows:

	December 31		
	2021	2020	2019
Cash and cash equivalents	$ 436,189	$ 32,073	$ 39,884
Restricted cash	219	237	216
Total cash, cash equivalents and restricted cash shown in the consolidated statements of cash flows	$ 436,408	$ 32,310	$ 40,100

Restricted cash balances relate to certificates of deposit issued as collateral to certain letters of credit issued as security to our lease arrangements. See Note 8.

Cash, cash equivalents and marketable securities consist of the following (in thousands):

	Amortized Cost	Unrealized Gains	Unrealized Losses	Estimated Fair Value
December 31, 2021				
Cash and cash equivalents:				
Cash	$ 6,995	$ -	$ -	$ 6,995
Money market funds	429,194	-	-	429,194
Total cash and cash equivalents	436,189	-	-	436,189
Marketable securities available-for-sale:				
U.S. treasuries	4,005	-	(1)	4,004
U.S. government agency securities	26,555	-	(7)	26,548
Corporate debt securities	79,200	9	-	79,209
Total marketable securities available-for-sale	109,760	9	(8)	109,761
Total cash, cash equivalents and marketable securities	$ 545,949	$ 9	$ (8)	$ 545,950
December 31, 2020				
Cash and cash equivalents:				
Cash	$ 7,945	$ -	$ -	$ 7,945
Money market funds	23,128	-	-	23,128
Corporate debt securities	1,000	-	-	1,000
Total cash and cash equivalents	32,073	-	-	32,073
Marketable securities available-for-sale:				
U.S. treasuries	32,548	31	-	32,579
U.S. government agency securities	40,313	14	(6)	40,321
Corporate debt securities	60,071	3	(11)	60,063
Total marketable securities available-for-sale	132,932	48	(17)	132,963
Total cash, cash equivalents and marketable securities	$ 165,005	$ 48	$ (17)	$ 165,036

The maturities of our marketable securities available-for-sale are as follows (in thousands):

.

	December 31, 2021	
	Amortized Cost	Estimated Fair Value
Mature in one year or less	$ 109,760	$ 109,761
Mature after one year through two years	-	-
	$ 109,760	$ 109,761

There were no gross realized gains or losses on investments for each of the year ended December 31, 2021 and 2019. For the year ended December 31, 2020, there were gross realized gains on investments of $0.1 million and no gross realized losses. Realized gains are included in interest income in the consolidated statements of operations. All investments with unrealized losses at December 31, 2021 have been in a loss position for less than twelve months. We do not intend to sell the investments that are in an unrealized loss position before recovery of their amortized cost basis. To date, there have been no declines in fair value that have been identified as other than temporary.

5. Inventories, net

The following table presents inventories, net (in thousands):

	December 31	
	2021	2020
Raw materials	$ 26,637	$ 25,121
Work-in-process	14,748	30,293
Finished goods	19,950	8,275
Total	$ 61,335	$ 63,689

As of December 31, 2021 and 2020, included in finished goods inventory was $18.6 million and $8.3 million of HEPLISAV-B inventory, respectively. The remaining balance in finished goods inventory was CpG 1018 adjuvant. There was no CpG 1018 adjuvant within raw materials and work-in-process inventory balance as of December 31, 2021 and 2020. Additionally, for the year ended December 31, 2021, due to the COVID-19 pandemic and its prolonged impact on vaccine utilization and corresponding revisions to our sales forecast, we recorded an approximately $2.6 million write-off to cost of sales – product associated with HEPLISAV-B slow moving short-dated inventory that had been manufactured prior to the beginning of the COVID-19 pandemic. For the year ended December 31, 2020 and 2019, there were no inventory write-offs recognized.

We recorded prepaid manufacturing costs related to prepayments made to third-party manufacturers of CpG 1018 adjuvant, of $159.7 million and $29.4 million as of December 31, 2021 and 2020, respectively. We expect these costs to be converted into inventory within the next twelve months.

6. Property and Equipment, net

Property and equipment consist of the following (in thousands):

	Estimated Useful Life (In years)	December 31, 2021	December 31, 2020
Manufacturing equipment	5-13	$ 12,532	$ 13,884
Lab equipment	5-13	2,492	2,888
Computer equipment	3	5,336	5,255
Furniture and fixtures	3-13	2,463	2,510
Leasehold improvements	2-10	27,634	28,417
Assets in progress		9,941	1,024
		60,398	53,978
Less accumulated depreciation and amortization		(25,378)	(23,411)
Total		$ 35,020	$ 30,567

Depreciation and amortization expense on property and equipment was $4.3 million, $4.3 million and $8.9 million for the years ended December 31, 2021, 2020 and 2019, respectively. Included in depreciation and amortization expense for the year ended December 31, 2019 was accelerated depreciation of $3.0 million related to certain long-lived assets. See Note 17.

7. Current Accrued Liabilities and Accrued Research and Development

Current accrued liabilities consist of the following (in thousands):

	December 31, 2021	December 31, 2020
Payroll and related expenses	$ 13,011	$ 8,684
Revenue reserve accruals	8,253	6,040
Accrued inventory	20,868	338
Other accrued liabilities	7,664	4,037
Total	$ 49,796	$ 19,099

8. Commitments and Contingencies

Leases

We lease our facilities in Emeryville, California and Düsseldorf, Germany.

In July 2019, we entered into a sublease for office space located at 2100 Powell Street, Emeryville, California (the "Powell Street Sublease"). Under the terms of the Powell Street Sublease, we are leasing 23,976 square feet at the rate of $3.90 per square foot, paid on a monthly basis. Rent is subject to scheduled annual increases and we are responsible for certain operating expenses and taxes throughout the life of the Powell Street Sublease. The Powell Street Sublease will continue until June 30, 2022. There is no option to extend the sublease term.

In September 2018, we entered into a lease ("Horton Street Master Lease") for office and laboratory space located at 5959 Horton Street, Emeryville, California ("Horton Street Premises"). Under the terms of the Horton Street Master Lease, we are leasing 75,662 square feet at the rate of $4.75 per square foot, paid on a monthly basis, starting on April 1, 2019 ("Commencement Date"). Rent is subject to scheduled annual increases, and we are also responsible for certain operating expenses and taxes throughout the life of Horton Street Master Lease. In connection with the Horton Street Master Lease, we have received tenant improvement allowance totaling $8.1 million through December 31, 2021. The Horton Street Master Lease has an initial term of 12 years, following the Commencement Date with an option to extend the lease for two successive five-year terms. The optional periods were not included in the lease term used in determining the right-of-use asset or the lease liability as we did not consider it reasonably certain that we would exercise the options. The operating lease right-of-use assets and liabilities on our December 31, 2021 and 2020 consolidated balance sheets primarily relate to the Horton Street Master Lease. Lease expense related to the Horton Street Master Lease is included in operating expense in our consolidated statements of operations.

In connection with the organizational restructuring in May 2019, we did not occupy the Horton Street Premises and in July 2019, we entered into an agreement to sublease the Horton Street Premises to a third party (“Horton Street Sublease”). Under the terms of the Horton Street Sublease, we are subleasing the entire 75,662 rentable square feet at the rate of $5.50 per square foot, paid on a monthly basis. Rent is subject to scheduled annual increases and the subtenant (“Subtenant”) is responsible for certain operating expenses and taxes throughout the life of the Horton Street Sublease. The Horton Street Sublease term is until March 31, 2031, unless earlier terminated, concurrent with the term of our Horton Street Master Lease. The Subtenant has no option to extend the sublease term. For the years ended December 31, 2021, 2020 and 2019, we recognized $7.7 million, $7.7 million and $2.6 million, respectively of sublease income included in other income (expense) in our consolidated statements of operations.

Under the terms of the Horton Street Master Lease, rent received from the Subtenant in excess of rent paid to the landlord is shared by paying the landlord 50% of the excess rent. The excess rent is considered a variable lease payment and the total estimated payments are being recognized as additional rent expense on a straight-line basis.

In September 2021, we entered into a commercial lease agreement in Düsseldorf, Germany (the "New Düsseldorf Lease"). The New Düsseldorf Lease is for the same space that we currently lease in Düsseldorf, Germany and with the same landlord. Our existing lease will continue until December 31, 2021, at which point the New Düsseldorf Lease will be in effect. We have determined that the New Düsseldorf Lease qualifies as a modification not accounted for as a separate contract. The New Düsseldorf Lease has an initial term of 10 years, beginning on January 1, 2022, with an option to extend the lease for two successive five-year terms. The optional periods were not included in the lease term used in determining the right-of-use assets and liabilities as we did not consider it reasonably certain that we would exercise the options. Beginning on January 1, 2024, the base rent is subject to an annual increase at the same percentage of Consumer Price Index of Germany. We are also responsible for certain operating expenses and taxes throughout the life of the New Düsseldorf Lease. We used our estimated incremental borrowing rate of 10.1% to recognize the initial right-of-use asset for the New Düsseldorf Lease.

Our lease expense comprises of the following (in thousands):

	Year Ended December 31,		
	2021	2020	2019
Operating lease expense	$ 6,265	$ 6,267	$ 6,886

Cash paid for amounts included in the measurement of lease liabilities for the years ended December 31, 2021 and 2020 was $7.0 million and $6.9 million, respectively and were included in change in lease liabilities in our consolidated statement of cash flows.

The balance sheet classification of our operating lease liabilities was as follows (in thousands):

	December 31, 2021	December 31, 2020
Operating lease liabilities:		
Current portion of lease liabilities (included in other current liabilities)	$ 2,577	$ 3,247
Long-term portion of lease liabilities	34,316	34,789
Total operating lease liabilities	$ 36,893	$ 38,036

At December 31, 2021, the maturities of our sublease income and operating lease liabilities were as follows (in thousands):

Years ending December 31,	Sublease Income	Operating Lease Liabilities
2022	$ 5,357	$ 6,174
2023	5,518	5,634
2024	5,684	5,778
2025	5,854	5,927
2026	6,030	6,080
Thereafter	27,712	28,259
Total	$ 56,155	57,852
Less:		
Present value adjustment		(20,959)
Total		$ 36,893

The weighted average remaining lease term and the weighted average discount rate used to determine the operating lease liability were as follows:

	December 31, 2021	December 31, 2020
Weighted average remaining lease term	9.1 years	9.1 years
Weighted average discount rate	10.1%	10.1%

Commitments

As of December 31, 2021, our purchase commitments include non-cancelable purchase for the supply of HEPLISAV-B and CpG 1018 adjuvant. The following summarizes our material purchase commitments at December 31, 2021 and the effect those obligations are expected to have on our liquidity and cash flows in future periods (in thousands):

Years ending December 31,	(in thousands)
2022	$ 55,318
2023	9,312
2024	10,857
2025	11,367
2026	11,872
Thereafter	-
Total	98,726

In addition to the non-cancelable commitments included above, we have entered into contractual arrangements that obligate us to make payments to the contractual counterparties upon the occurrence of future events. In addition, in the normal course of operations, we have entered into license and other agreements and intend to continue to seek additional rights relating to compounds or technologies in connection with our discovery, manufacturing and development programs. Under the terms of the agreements, we may be required to pay future up-front fees, milestones and royalties on net sales of products originating from the licensed technologies, if any, or other payments contingent upon the occurrence of future events that cannot reasonably be estimated.

We also rely on and have entered into agreements with research institutions, contract research organizations and clinical investigators as well as clinical material manufacturers. These agreements are terminable by us upon written notice. Generally, we are liable only for actual effort expended by the organizations at any point in time during the contract through the notice period.

As of December 31, 2021, the aggregate principal amount of our Convertible Notes was $225.5 million, excluding debt discount of $5.0 million (see Note 10). The Convertible Notes mature on May 15, 2026, unless converted, redeemed or repurchased in accordance with their terms prior to such date.

During 2004, we established a letter of credit with Deutsche Bank as security for our Düsseldorf Lease in the amount of €0.2 million (Euros). The letter of credit remained outstanding through December 31, 2021 and is collateralized by a certificate of deposit for €0.2 million, which has been included in restricted cash in the consolidated balance sheets as of December 31, 2021 and 2020.

Sale of SD-101 Program

In July 2020, we sold assets related to our immuno-oncology compound, SD-101, which included intellectual property, clinical and non-clinical data, regulatory filings, clinical supply inventory and certain contracts, to Surefire Medical Inc. d/b/a TriSalus Life Sciences ("TriSalus"). Pursuant to the Asset Purchase Agreement, we received $5 million upon closing of the transaction and $4 million in December 2020 as reimbursement for certain clinical trial expenses. In addition, we could receive up to an additional $250 million upon the achievement of certain development, regulatory, and commercial milestones and low double-digit royalties based on potential future net sales of product containing SD-101 compound. In September 2021, we received payment of $1 million from TriSalus for their meeting a pre-commercialization milestone.

For the year ended December 31, 2021 and 2020, we recognized a gain on sale of SD-101 assets of $1 million and $6.9 million, respectively based on the amount of consideration received, net of any transaction costs.

In conjunction with our agreement with Symphony Dynamo, Inc. and Symphony Dynamo Holdings LLC ("Holdings") in November 2009, we agreed to make contingent cash payments to Holdings equal to 50% of the first $50 million from any upfront, pre-commercialization milestone or similar payments received by us from any agreement with any third party with respect to the development and/or commercialization of cancer and hepatitis C therapies originally licensed to Symphony Dynamo, Inc., including SD-101. Pursuant to this agreement, we paid Holdings $0.5 million in September 2021 and $2.5 million in August 2020 which were included in selling, general and administrative expense in our consolidated statements of operations for the year ended December 31, 2021 and 2020, respectively.

Contingencies

From time to time, we may be involved in claims, suits, and proceedings arising from the ordinary course of our business, including actions with respect to intellectual property claims, commercial claims, and other matters. Such claims, suits, and proceedings are inherently uncertain and their results cannot be predicted with certainty. Regardless of the outcome, such legal proceedings can have an adverse impact on us because of legal costs, diversion of management resources, and other factors. In addition, it is possible that a resolution of one or more such proceedings could result in substantial damages, fines, penalties or orders requiring a change in our business practices, which could in the future materially and adversely affect our financial position, financial statements, results of operations, or cash flows in a particular period.

9. Collaborative Research, Development and License Agreements

Coalition for Epidemic Preparedness Innovations

In September 2020, we entered into a Reservation Agreement for the Provision of Goods (the "Reservation Agreement") with Coalition for Epidemic Preparedness Innovations ("CEPI") to make available specified quantities of CpG 1018 adjuvant, for purchases at certain prices, to CEPI and its COVID-19 vaccine development partners. Payments received under the Reservation Agreement are considered an exchange for our CpG 1018 adjuvant which is an output of our ordinary activities. As such, we account for the arrangement under the scope of ASC 606. Payments are recorded as deferred revenue and recognized as revenue in the period when we satisfy our performance obligation to deliver CpG 1018 ordered or when CEPI's right to place an order expires. Pursuant to the Reservation Agreement, we received $6.3 million from CEPI in September 2020 for production scale-up and a fourth quarter 2020 reservation fee. In October 2020, CEPI terminated the Reservation Agreement and its right to place an order expired. Therefore, we recognized $6.3 million as other revenue in the fourth quarter of 2020.

In January 2021, we entered into an agreement (the "CEPI Agreement") with CEPI for the manufacture and reservation of a specified quantity of CpG 1018 adjuvant ("CpG 1018 Materials"). The CEPI Agreement enables CEPI to direct the supply of CpG 1018 Materials to CEPI partners. CEPI partner(s) would purchase CpG 1018 Materials under separately negotiated agreements. The CEPI Agreement also allows us to sell CpG 1018 Materials to third parties if not purchased by a CEPI partner within a two-year term.

In exchange for reserving CpG 1018 Materials and agreeing to sell CpG 1018 Materials to CEPI partner(s) at pre-negotiated prices, CEPI agreed to provide payments in the form of an interest-free, unsecured, forgivable loan (the "Advance Payments") of up to $99.0 million. We are obligated to repay the Advance Payments, in proportion to quantity sold, if and to the extent we receive payments from sales of CpG 1018 Materials reserved under the CEPI Agreement. If the vaccine programs pursued by CEPI partner(s) are unsuccessful and no alternative use is found for CpG 1018 Materials reserved under the CEPI Agreement, the applicable Advance Payments will be forgiven at the end of the two-year term.

In May 2021, we entered into the first Amendment to the CEPI Agreement. This Amendment provided for the manufacture and reservation of an additional specified quantity of CpG 1018 adjuvant. In exchange for reserving an additional specified quantity of CpG 1018 adjuvant, CEPI agreed to provide additional Advance Payments of up to $77.4 million, together with the initial CEPI Agreement, for total Advance Payments of up to $176.4 million.

We determined that the accounting of the Advance Payments is under the scope of ASC 606. The Advance Payments are to cover the costs of manufacture and to reserve CpG 1018 Materials, which is an output of our ordinary activities. As such, the Advance Payments are initially classified as long-term deferred revenue in our consolidated balance sheets. We are obligated to repay CEPI, in proportion to quantity sold and within a certain period, upon receipt of payment from CEPI partner(s). Thus, when we deliver CpG 1018 Materials to CEPI partner(s) or when we receive payment from CEPI partner(s), we reclassify the Advanced Payments from long-term deferred revenue to accrued liabilities. We recognize the Advance Payments as revenue when the amount (or a portion thereof) is forgiven by CEPI when (i) the CpG 1018 Materials are not sold through to CEPI partner(s), (ii) there is no alternative use and (iii) the CpG 1018 Materials are destroyed.

Through December 31, 2021, we have received Advance Payments totaling approximately $168.5 million pursuant to the CEPI Agreement. As of December 31, 2021, advance payments totaling $5.4 million were included in other long-term liabilities and $128.8 million were recorded as CEPI accrual in our consolidated balance sheets. As of December 31, 2021, we recorded $14.6 million in CEPI receivable which is included in other receivables in our consolidated balance sheets. There were no such balances recorded in our consolidated balance sheets as of December 31, 2020.

Zhejiang Clover Biopharmaceuticals, Inc. and Clover Hong Kong Inc.

In June 2021, we entered into an agreement with Zhejiang Clover Biopharmaceuticals, Inc. and Clover Hong Kong Inc. (collectively, "Clover"), for the commercial supply of CpG 1018 adjuvant, for use with Clover's COVID-19 vaccine candidate, SCB-2019 (the "Clover Supply Agreement"). Under the Clover Supply Agreement, Clover has committed to purchase specified quantities of CpG 1018 adjuvant, at pre-negotiated prices pursuant to the CEPI Agreement, for use in Clover's commercialization of vaccines containing SCB-2019 and CpG 1018 adjuvant ("Clover Product"). The Clover Supply Agreement also provides terms for Clover to order additional quantities of CpG 1018 adjuvant beyond the quantities reserved by CEPI.

Pricing for CpG 1018 adjuvant is variable depending on the destination where Clover ultimately sells Clover Product to. Pursuant to the Clover Supply Agreement, our initial invoicing is at the lowest price tier, with a true-up mechanism to issue additional invoice for the difference between the initial invoice price and the higher tiered price, if any. In addition, if the net selling price of such Clover Product exceeds a threshold specified in the Clover Supply Agreement, we are entitled to a royalty calculated as a percentage of the excess portion of such net selling price.

For CpG 1018 adjuvant reserved for Clover under the CEPI Agreement, Clover is obligated to pay the purchase price upon the earliest of (i) the true-up exercise, (ii) within a specified period after Clover delivers Clover Product to a customer, or (iii) Clover's receipt of payment for Clover Product from a customer. For CpG 1018 adjuvant ordered by Clover outside the CEPI Agreement, Clover is obligated to pay a specified percentage of the purchase price, as set forth in a purchase order submitted by Clover, upon our acceptance of such purchase order, and the remainder of the purchase price upon the release of such CpG 1018 adjuvant.

We recognize revenue at the lowest price tier upon transfer of control of CpG 1018 adjuvant to Clover. The potential true-up amount and royalties are considered constrained. There is no significant financing component, as the timing between shipment and payment is expected to be within twelve months. Payments received or invoices issued before we transfer control of CpG 1018 adjuvant are recorded as deferred revenue. When we transfer control of CpG 1018 adjuvant that is reserved under the CEPI Agreement, we recognize product revenue and a corresponding contract asset as our right to consideration is contingent on something other than the passage of time, as outlined above.

As of December 31, 2021, our contract asset balance of $62.5 million was included in other current assets in our consolidated balance sheets. As of December 31, 2021, we recorded accounts receivable balance of $2.1 million from Clover. As of December 31, 2021, we recognized approximately $191.1 million in deferred revenue for a portion of Clover's binding commitment to purchase CpG 1018 adjuvant outside the CEPI Agreement. There was no deferred revenue recognized for a portion of Clover's binding commitment to purchase CpG 1018 adjuvant that was reserved for Clover under the CEPI Agreement. There was no contract asset, accounts receivable or deferred revenue balance at the beginning of the period.

For the year ended December 31, 2021, we recognized CpG 1018 product revenue of $72.2 million from Clover. There was no CpG 1018 product revenue from Clover recognized during the year ended December 31, 2020 and 2019.

Biological E. Limited

In July 2021, we entered into an agreement (the "Bio E Supply Agreement") with Biological E. Limited ("Bio E"), for the commercial supply of CpG 1018 adjuvant, for use with Bio E's subunit COVID-19 vaccine candidate, CORBEVAX™. Under the Bio E Supply Agreement, Bio E has committed to purchase specified quantities of CpG 1018 adjuvant, at pre-negotiated prices pursuant to the CEPI Agreement, for use in Bio E's commercialization of its CORBEVAX vaccine ("Bio E Product") with specified delivery dates in 2021 and the first quarter of 2022. The Bio E Supply Agreement also provides terms for Bio E to order additional quantities of CpG 1018 adjuvant beyond the quantities reserved by CEPI.

Pricing for CpG 1018 adjuvant is variable depending on the destination where Bio E ultimately sells Bio E Product to. Pursuant to the Bio E Supply Agreement, our initial invoicing will be at the lowest price tier, with a true-up mechanism to issue additional invoice for the difference between the initial invoice price and the higher tiered price, if any. In addition, if the net selling price of such Bio E Product exceeds a threshold specified in the Bio E Supply Agreement, we are entitled to a royalty calculated as a percentage of the excess portion of such net selling price.

For CpG 1018 adjuvant reserved for Bio E under the CEPI Agreement, Bio E is obligated to pay, in full, the aggregate purchase price, as set forth in a purchase order submitted by Bio E, upon delivery of CpG 1018 adjuvant. For CpG 1018 adjuvant ordered by Bio E outside the CEPI Agreement, Bio E is obligated to pay a specified percentage of the purchase price, as set forth in a purchase order submitted by Bio E, upon our acceptance of such purchase order, and the remainder of the purchase price upon the delivery of such CpG 1018 adjuvant.

We recognize revenue at the lowest price tier upon transfer of control of CpG 1018 adjuvant to Bio E. The potential true-up amount and royalties are considered constrained. There is no significant financing component, as the timing between shipment and payment is expected to be within twelve months. Payments received or invoices issued before we transfer control of CpG 1018 adjuvant are recorded as deferred revenue.

As of December 31, 2021, we recorded accounts receivable balance of $96.1 million from Bio E. As of December 31, 2021, we recognized approximately $103.3 million in deferred revenue for a portion of Bio E's binding commitment to purchase CpG 1018 adjuvant outside the CEPI Agreement. There was no deferred revenue recognized for a portion of Bio E's binding commitment to purchase CpG 1018 adjuvant that was reserved for Bio E under the CEPI Agreement. There was no accounts receivable or deferred revenue balance at the beginning of the period.

For the year ended December 31, 2021, we recognized CpG 1018 product revenue of $185.7 million from Bio E. There was no CpG 1018 product revenue from Bio E recognized during the year ended December 31, 2020 and 2019.

Medigen Vaccine Biologics

In February 2021, we entered into a Supply Agreement ("Medigen Supply Agreement") with Medigen Vaccine Biologics ("Medigen") to manufacture and supply specified quantities of CpG 1018 adjuvant for use in the development and commercialization of Medigen's COVID-19 vaccine for delivery in the first and second quarters of 2021.

In August 2021, we entered into a second supply agreement ("Medigen Supply Agreement No. 2") to manufacture and supply additional specified quantities of CpG 1018 adjuvant for delivery in the third and fourth quarter of 2021.

Under Medigen Supply Agreement No. 2, pricing for CpG 1018 adjuvant is variable depending on the destination where Medigen ultimately sells Medigen Product to. Pursuant to the Medigen Supply Agreement No. 2, we invoice Medigen based on the highest-tier price, with a true-up mechanism to issue credit to Medigen for the difference between the initial invoice price and the lower tiered price, if any. We invoice Medigen a specified percentage of the aggregate price of the order upon acceptance of the order and the remaining upon delivery. In addition, we are entitled to a royalty calculated as a percentage of the adjusted net sales.

We recognize revenue upon transfer of control of CpG 1018 adjuvant to Medigen at the highest-tiered price. The potential royalties are considered constrained. There is no significant financing component, as the timing between shipment and payment is expected to be within twelve months. Payments received or invoices issued before we transfer control of CpG 1018 adjuvant are recorded as deferred revenue.

As of December 31, 2021, we recorded accounts receivable balance of $2.4 million from Medigen. There was no accounts receivable balance at the beginning of the period. For the year ended December 31, 2021 and 2020, we recognized CpG 1018 product revenue from Medigen of $26.7 million and $1.2 million, respectively. There was no CpG 1018 product revenue from Medigen recognized during the year ended December 31, 2019.

Valneva SE

In April 2020, we entered into a collaboration agreement ("Valneva Collaboration Agreement") with Valneva Scotland Limited (“Valneva”) to provide CpG 1018 adjuvant for use in the development of Valneva’s COVID-19 vaccine candidate ("VLA2001"). The Valneva Collaboration Agreement was amended in July 2020, to provide additional quantities of CpG 1018 adjuvant. In September 2020, we entered into a supply agreement (“Valneva Supply Agreement”) with Valneva to manufacture and supply specified quantities of CpG 1018 adjuvant for use in the commercialization of VLA2001.

We concluded that the Valneva Collaboration Agreement and the Valneva Supply Agreement were entered into at or near the same time, with the same customer and were negotiated as a package with a single commercial objective to provide CpG 1018 adjuvant to Valneva. Therefore, the Valneva Collaboration Agreement and the Valneva Supply Agreement should be combined and accounted for as a single arrangement.

In October 2021, we and Valneva entered into a letter agreement (the “Valneva Amendment”) modifying certain deliverables of the Valneva Supply Agreement. Specifically, the Valneva Amendment modifies the original Valneva Supply Agreement as follows: (1) cancels certain purchase orders for CpG 1018 adjuvant previously issued under the original Valneva Supply Agreement that had not been fulfilled as of the date of the Valneva Amendment; and (2) provides a future delivery schedule for commercial supply of CpG 1018 adjuvant through 2022. As of the date of the Valneva Amendment, we had received non-refundable advance payments of approximately $55.4 million associated with the cancelled purchase orders.

In accordance with revenue recognition guidance in ASC 606, the Valneva Amendment was determined to be a contract modification and will be accounted for prospectively as one agreement with consideration allocated to future performance obligations. We have identified one remaining performance obligation which is the delivery of CpG 1018 adjuvant through 2022. The total amount of consideration allocated to the remaining performance obligation includes approximately $55.4 million of advance payments received as of the date of the Valneva Amendment plus additional future consideration to be received in connection with final delivery of product. As of December 31, 2021, approximately $55.4 million of advance payments remain recorded as deferred revenue and will be recognized as product revenue when we satisfy our remaining performance obligation to deliver CpG 1018 adjuvant under the Valneva Amendment.

As of December 31, 2021 and 2020, deferred revenue related to Valneva was $55.4 million and $37.0 million, respectively. For the year ended December 31, 2021 and 2020, we recognized CpG 1018 product revenue of $89.4 million and $2.0 million, respectively. There was no CpG 1018 product revenue from Valneva recognized during the year ended December 31, 2019.

Bill & Melinda Gates Foundation Grant Agreement

In July 2020, we entered into a grant agreement (the "BMGF Grant Agreement") with Bill & Melinda Gates Foundation (“BMGF”), under which we were awarded a grant of up to $3.4 million to scale up production of our CpG 1018 adjuvant to support the global COVID-19 response and we received $1.2 million of the grant from BMGF which we accounted for as deferred revenue in our consolidated balance sheets as of December 31, 2020.

In July 2021, the BMGF Grant Agreement expired. Pursuant to the BMGF Grant Agreement, we were not obligated to return the $1.2 million funding that we spent on grant-related activities. For the year ended December 31, 2021, we recognized $1.2 million as other revenue in our consolidated statements of operations.

U.S. Department of Defense

In September 2021, we entered into an agreement with the U.S. Department of Defense ("DoD") for the development of a recombinant plague vaccine adjuvanted with CpG 1018 for approximately $22.0 million over two and a half years. Under the agreement, we will conduct a Phase 2 clinical trial combining our CpG 1018 adjuvant with the DoD's rF1V vaccine. We anticipate the Phase 2 trial will commence in 2022. For the year ended December 31, 2021, we recognized revenue of $0.5 million which are included in other revenue in our consolidated statements of operations.

Serum Institute of India Pvt. Ltd.

In June 2017, we entered into an agreement to provide Serum Institute of India Pvt. Ltd. (“SIIPL”) with technical support. In consideration, SIIPL agreed to pay us at an agreed upon hourly rate for services and reimburse certain out-of-pocket expenses. In addition, we have rights to commercialization of certain potential products manufactured at the SIIPL facility. For the years ended December 31, 2021, 2020 and 2019, we recognized collaboration revenue of $0.4 million, $0.9 million and $0.1 million, respectively which are included in other revenue in our consolidated statements of operations.

10. Convertible Notes

In May 2021, we issued $200.0 million aggregate principal amount of 2.50% convertible senior notes due 2026 in a private placement. The purchasers also partially exercised their option to purchase additional Convertible Notes in May 2021 and we issued an additional $25.5 million of the Convertible Notes. Total proceeds from the issuance of the Convertible Notes, net of debt issuance and offering costs of $5.7 million, were $219.8 million. We used $190.2 million of the net proceeds to repay, in full, our outstanding debt and other obligations under the Loan Agreement (see Note 11) and $27.2 million of the net proceeds to pay the costs of the capped call transactions described below.

The Convertible Notes are general unsecured obligations and accrue interest at a rate of 2.50% per annum payable semiannually in arrears on May 15 and November 15 of each year, beginning on November 15, 2021. The Convertible Notes mature on May 15, 2026, unless converted, redeemed or repurchased in accordance with their terms prior to such date.

The Convertible Notes are convertible into cash, shares of our common stock or a combination of cash and shares of our common stock, at our election, at an initial conversion rate of 95.5338 shares of our common stock per $1,000 principal amount of the Convertible Notes, which is equivalent to an initial conversion price of approximately $10.47 per share of our common stock. The Convertible Notes are convertible at the option of the holders at any time prior to the close of business on the business day immediately preceding February 15, 2026, only under the following circumstances:

1. During any calendar quarter commencing after September 30, 2021 (and only during such calendar quarter), if the last reported sale price of our common stock for at least 20 trading days (whether or not consecutive) during a period of 30 consecutive trading days ending on, and including, the last trading day of the immediately preceding calendar quarter is greater than or equal to 130% of the conversion price on each applicable trading day;
2. During the five business day period after any ten consecutive trading day period (the “measurement period”), in which the “trading price” (as defined the indenture governing the Convertible Notes) per $1,000 principal amount of the Convertible Notes for each trading day of the measurement period was less than 98% of the product of the last reported sale price of our common stock and the conversion rate on each such trading day;
3. If we call such Convertible Notes for redemption, at any time prior to the close of business on the scheduled trading day immediately preceding the redemption date; or
4. Upon the occurrence of specified corporate events as set forth in the indenture governing the Convertible Notes.

On or after February 15, 2026 until the close of business on the second scheduled trading day immediately preceding the maturity date, holders of the Convertible Notes may convert all or any portion of their Convertible Notes regardless of the foregoing circumstances. The Convertible Notes were convertible, in whole or in part, at the option of the holders between October 1, 2021 through December 31, 2021 as the conditions allowing holders of the Convertible Notes to convert have been met. None of the Convertible Notes had been converted during this period.

On January 1, 2022, the conditional conversion feature of the Convertible Notes was triggered as the last reported sale price of our common stock was more than or equal to 130% of the conversion price for at least 20 trading days in the period of 30 consecutive trading days ending on December 31, 2021 (the last trading day of the immediately preceding fiscal quarter), and therefore the Convertible Notes are currently convertible, in whole or in part, at the option of the holders between January 1, 2022 through March 31, 2022. Whether the Convertible Notes will be convertible following such period

will depend on the continued satisfaction of this condition or another conversion condition in the future. We had not received any conversion notices. Since we have the election of repaying the Convertible Notes in cash, shares of our common stock, or a combination of both, we continued to classify the Convertible Notes as long-term debt on the consolidated balance sheets as of December 31, 2021.

We may redeem for cash all or any portion of the Convertible Notes, at our option, on or after May 20, 2024 and prior to the 31st scheduled trading day immediately preceding the maturity date, if the last reported sale price of our common stock has been at least 130% of the conversion price then in effect for at least 20 trading days (whether or not consecutive) during any 30 consecutive trading day period (including the last trading day of such period) ending on the trading day immediately preceding the date on which we provide notice of redemption, at a redemption price equal to 100% of the principal amount of the Convertible Notes to be redeemed, plus accrued and unpaid interest to, but excluding, the redemption date.

If we undergo a fundamental change (as set forth in the indenture governing the Convertible Notes), noteholders may require us to repurchase for cash all or any portion of their Convertible Notes at a repurchase price equal to 100% of the principal amount of the notes to be repurchased, plus accrued and unpaid interest to the fundamental change repurchase date. In addition, following certain corporate events (as set forth in the indenture governing the Convertible Notes) or if we deliver a notice of redemption prior to the maturity date, we will, in certain circumstances, adjust the conversion rate for a noteholder who elects to convert its notes in connection with such a corporate event or such notice of redemption.

As a result of adopting ASU 2020-06, we accounted for the Convertible Notes as a single liability. As of December 31, 2021, the Convertible Notes were recorded at the aggregate principal amount of $225.5 million less unamortized issuance costs of $5.0 million as a long-term liability on the consolidated balance sheets. As of December 31, 2021, the fair value of the Convertible Notes was $368.6 million. See Note 2. The debt issuance costs are amortized to interest expense over the contractual term of the Convertible Notes at an effective interest rate of 3.1%.

The following table presents the components of interest expense related to Convertible Notes (in thousands):

	Year Ended December 31, 2021
Stated coupon interest	$ 3,555
Amortization of debt issuance cost	669
Total interest expense	$ 4,224

Capped Calls

In connection with the issuance of the Convertible Notes, we entered into capped call transactions with one of the initial purchasers of the Convertible Notes and other financial institutions, totaling $27.2 million (the “Capped Calls”). The Capped Calls cover, subject to customary adjustments, the number of shares of our common stock that initially underlie the Convertible Notes (or 21,542,871 shares of our common stock). The Capped Calls have an initial strike price and an initial cap price of $10.47 per share and $15.80 per share, respectively, subject to certain adjustments. Conditions that cause adjustments to the initial strike price of the Capped Calls mirror conditions that result in corresponding adjustments to the conversion price of the Convertible Notes. The Capped Calls are expected to offset the potential dilution to our common stock as a result of any conversion of the Convertible Notes, subject to a cap based on the cap price.

For accounting purposes, the Capped Calls are considered separate financial instruments and not part of the Convertible Notes. As the Capped Calls transactions meet certain accounting criteria, we recorded the cost of the Capped Calls, totaling $27.2 million, as a reduction to additional paid-in capital within the consolidated statements of stockholders’ equity.

11. Long-Term Debt

Long-Term Debt

On February 20, 2018, we entered into a $175.0 million term Loan Agreement with CRG Servicing LLC. We borrowed $100.0 million under the Loan Agreement at closing and the remaining $75.0 million in March 2019 (collectively, “Term Loans”). Net proceeds under the Loan Agreement were $173.3 million. The Term Loans under the Loan Agreement bore interest at a rate equal to 9.5% per annum. The Term Loans had a maturity date of December 31, 2023.

In May 2021, we repaid the principal on the Term Loans, in full, using the net proceeds from the Convertible Notes issuance. In connection with the early repayment of the Term Loans, in the second quarter of 2021, we recorded $5.2 million loss on debt extinguishment related to the amount we paid to terminate the Term Loans in excess of its carrying value at the time of the repayment. Our final payment of $190.2 million to CRG Servicing LLC satisfied all of our obligations under the Loan Agreement. With the full repayment of the Term Loans, all security interests, covenants, liens and encumbrances under the Loan Agreement were permanently released.

We recorded $7.0 million, $19.1 million and $16.5 million of interest expense related to the Term Loans during the year ended December 31, 2021, 2020 and 2019, respectively.

12. Revenue Recognition

Disaggregation of Revenues

The following table disaggregates our product revenue, net by product and geographic region and disaggregates our other revenues by geographic region (in thousands):

	Year Ended December 31, 2021			Year Ended December 31, 2020			Year Ended December 31, 2019		
	U.S.	Non U.S.	Total	U.S.	Non U.S.	Total	U.S.	Non U.S.	Total
Product revenue, net									
HEPLISAV-B	$ 61,870	$ -	$ 61,870	$ 36,030	$ -	$ 36,030	$ 34,644	$ -	$ 34,644
CpG 1018	-	375,229	375,229	-	3,277	3,277	-	-	-
Total product revenue, net	$ 61,870	$ 375,229	$ 437,099	$ 36,030	$ 3,277	$ 39,307	$ 34,644	$ -	$ 34,644
Other revenue	1,915	428	2,343	-	7,244	7,244	410	165	575
Total revenues	$ 63,785	$ 375,657	$ 439,442	$ 36,030	$ 10,521	$ 46,551	$ 35,054	$ 165	$ 35,219

Revenues from Major Customers

The following table summarizes HEPLISAV-B product revenue from each of our three largest Customers (as a percentage of total HEPLISAV-B product revenue):

	Year Ended December 31,		
	2021	2020	2019
Largest Customer	21%	21%	22%
Second largest Customer	19%	20%	21%
Third largest Customer	19%	20%	19%

The following table summarizes CpG 1018 product revenue from each of our three largest collaboration partners (as a percentage of total CpG 1018 product revenue):

	Year Ended December 31,		
	2021	2020	2019
Largest collaboration partner	49%	62%	0%
Second largest collaboration partner	24%	36%	0%
Third largest collaboration partner	19%	2%	0%

Contract Balances

The following table summarizes balances and activities in HEPLISAV-B product revenue allowance and reserve categories (in thousands):

	Balance at Beginning of Period	Provisions related to current period sales	Credit or payments made during the period	Balance at End of Period
Year ended December 31, 2021:				
Accounts receivable reserves(1)	$ 2,836	$ 18,209	$ (17,222)	$ 3,823
Revenue reserve accruals(2)	$ 6,040	$ 13,077	$ (10,864)	$ 8,253
Year ended December 31, 2020:				
Accounts receivable reserves(1)	$ 2,701	$ 11,417	$ (11,282)	$ 2,836
Revenue reserve accruals(2)	$ 3,893	$ 6,694	$ (4,547)	$ 6,040

(1) Reserves are for chargebacks, discounts and other fees.
(2) Accruals are for returns, rebates and other fees.

When we transfer control of CpG 1018 adjuvant that is reserved under the CEPI Agreement to Clover, we recognize product revenue and a corresponding contract asset as our right to consideration is conditioned on something other than the passage of time. See Note 9 for further discussion. The following table summarizes balances and activities in our contract asset account (in thousands):

	Balance at Beginning of Period	Additions (1)	Subtractions	Balance at End of Period
Year ended December 31, 2021:				
Contract asset	$ -	$ 62,525	$ -	$ 62,525
Year ended December 31, 2020:				
Contract asset	$ -	$ -	$ -	$ -

(1) Additions are revenues recognized for CpG 1018 adjuvant transferred to Clover that is reserved under the CEPI Agreement.

Payments received or invoices issued before we satisfy our performance obligations are recorded as deferred revenue until we satisfy such performance obligations. Our deferred revenue activities are related to CpG 1018 product sales. The following table summarizes balances and activities in our deferred revenue accounts (in thousands):

	Balance at Beginning of Period	Additions (1)	Subtractions (2)	Revenue recognized in the current period included in deferred revenue balance at the beginning of the period	Balance at End of Period
Year ended December 31, 2021:					
Deferred revenue	$ 38,212	$ 371,860	$ (21,996)	$ (38,212)	$ 349,864
Long-term deferred revenue	-	168,467	(163,082)	-	5,385
Year ended December 31, 2020:					
Deferred revenue	$ -	$ 38,212	$ -	$ -	$ 38,212
Long-term deferred revenue	-	-	-	-	-

(1) Additions are primarily payments received or invoices issued before we satisfy our performance obligations.
(2) Subtractions are primarily revenues recognized in the period and reclassification from long-term deferred revenue to CEPI accrual.

13. Net Income (Loss) Per Share

We compute net income (loss) per share of common stock using the two-class method required for participating securities. We consider Series B Preferred Stocks and warrants to be participating securities because holders of such shares have dividend rights in the event of our declaration of a dividend for common shares. Undistributed earnings allocated to participating securities are subtracted from net income (loss) in determining net income (loss) attributable to common stockholders.

Basic net income (loss) per share is computed by dividing net income (loss) attributable to common stockholders by the weighted-average number of shares of our common stock outstanding.

For the calculation of diluted net income (loss) per share, net income (loss) attributable to common stockholders for basic net income (loss) per share is adjusted by the effect of dilutive securities, including awards under our equity compensation plans and change in fair value of warrant liability. Diluted net income (loss) per share attributable to common stockholders is computed by dividing the resulting net income (loss) attributable to common stockholders by the weighted-average number of fully diluted common shares outstanding.

	Year Ended December 31,		
	2021	2020	2019
Numerator			
Net income (loss)	$ 76,713	$ (75,240)	$ (152,600)
Less: undistributed earnings allocated to participating securities	(4,569)	-	-
Less: preferred stock deemed dividend	-	-	(3,267)
Net income (loss) allocable to common stockholders, basic	72,144	(75,240)	(155,867)
Add: undistributed earnings allocated to Series B and warrants	4,569	-	-
Less: undistributed earnings allocated to Series B and warrants	(4,190)	-	-
Add: interest expense on convertible notes	3,168	-	-
Less: removal of change in fair value of warrant liability	-	(4,124)	-
Net income (loss) allocable to common stockholders, diluted	$ 75,691	$ (79,364)	$ (155,867)
Denominator			
Weighted average shares used to compute net income (loss) allocable to common stockholders per share, basic	116,264	100,753	72,024
Effect of dilutive shares:			
Stock-based compensation plans	3,075	-	-
Convertible Notes (as converted to common stock)	13,667	-	-
Effect of dilutive warrants	-	751	-
Weighted average shares used to compute net income (loss) allocable to common stockholders per share, diluted	133,006	101,504	72,024

The following were excluded from the calculation of diluted net income (loss) per share as the effect of their inclusion would have been anti-dilutive:

	December 31,		
	2021	2020	2019
Outstanding securities not included in diluted net income (loss) allocable to common stockholders per share calculation (in thousands):			
Stock options and stock awards	5,953	10,299	9,789
Series B Convertible Preferred Stock (as converted to common stock)	-	4,140	4,840
Warrants (as exercisable into common stock)	1,883	-	5,841
Convertible Notes (as converted to common stock)	-	-	-

14. Common Stock

Common Stock Outstanding

As of December 31, 2021, there were 122,945,357 shares of our common stock outstanding.

In August 2019, we sold 18,525,000 shares of our common stock, par value $0.001 per share, 4,840 shares of our Series B Convertible Preferred Stock, par value $0.001 per share ("Series B Preferred Stock") and warrants to purchase up to an aggregate of 5,841,250 shares of our common stock in an underwritten public offering (the "Offering") for aggregate net proceeds of approximately $65.6 million.

Investment funds associated with Bain Capital Life Sciences Investors, LLC ("Bain Capital Life Sciences") purchased approximately $35.0 million of common stock, Series B Preferred Stock and warrants in the Offering on the same terms as the other investors in the Offering. Following the Offering, Andrew A. F. Hack, M.D., Ph.D., a Managing Director of Bain Capital Life Sciences, was appointed to our board of directors.

In June 2021, Bain Capital Life Sciences and its affiliates sold warrants to purchase an aggregate of 2,916,250 shares of our common stock for aggregate consideration of $11.8 million, representing all of the warrants held by Bain Capital Life Sciences and its affiliates.

In May 2020, we completed an underwritten public offering of 16,100,000 shares of our common stock, par value $0.001 per share, including 2,100,000 shares sold pursuant to the full exercise of an overallotment option previously granted to the underwriters. All of the shares were offered at a price to the public of $5.00 per share. The net proceeds to us from this offering were approximately $75.4 million, after deducting the underwriting discount and other offering expenses payable by us. Bain Life Sciences Funds purchased 1,000,000 shares of common stock in the underwritten public offering. Bain Capital Life Sciences is the general partner of Bain Life Sciences Funds. The participation by Bain Life Sciences Funds was on the same terms as the other investors in the offering.

On August 6, 2020, we entered into an at-the-market Sales Agreement (the "2020 ATM Agreement") with Cowen and Company, LLC ("Cowen"), under which we may offer and sell from time to time, at our sole discretion, shares of our common stock having an aggregate offering price of up to $150 million through Cowen as our sales agent. We agreed to pay Cowen a commission of up to 3% of the gross sales proceeds of any common stock sold through Cowen under the 2020 ATM Agreement. For the year ended December 31, 2021, we received net cash proceeds of $28.2 million resulting from sales of 2,878,567 shares of our common stock pursuant to the 2020 ATM Agreement. All of these shares were sold during the three months ended March 31, 2021. As of December 31, 2021, we had $120.5 million remaining under the 2020 ATM Agreement.

Preferred Stock Outstanding

In August 2021, all of the 4,140 shares of Series B Preferred Stock were converted into 4,140,000 shares of common stock. As of December 31, 2021, there were no shares of Series B Preferred Stock outstanding.

Warrants

During the year ended December 31, 2021, 3,958,650 of our common stock warrants were exercised. There was no exercise of our common stock warrants during the year ended December 31, 2020 and 2019. As of December 31, 2021, the following common stock warrants were outstanding:

Warrants Issuance Date	Shares Issuable (in thousands)	Expiration Date	Exercise Price per Share	Outstanding as of December 31, 2021 (in thousands)
August 12, 2019	1,883	February 12, 2022	$ 4.50	1,883

As of February 28, 2022, all 1,882,600 of the outstanding warrants as of December 31, 2021 have been exercised or expired resulting in cash settlement of $8.5 million.

Warrants were exercisable upon issuance. The holder is prohibited from exercising these warrants if, as a result of such exercise, the holder and its affiliates, would own more than 4.99% of the total number of shares of common stock then issued

and outstanding, which percentage may be changed at the holders' election to a higher or lower percentage (not to exceed 19.99%) upon 61 days' notice to the Company.

The warrants contain provisions that may obligate us to repurchase them for an amount that does not represent fair value in the event of a change of control. Due to this provision, the warrants do not meet the criteria to be considered indexed to our own stock. Accordingly, we recorded the warrants as a derivative liability.

The warrants will be revalued at each reporting period using the Black-Scholes model and the change in the fair value of the warrants will recognized as other income (expense) in the consolidated statements of operations. At December 31, 2021 and 2020, the estimated fair value of warrant liability was $18.0 million and $10.7 million, respectively. For the year ended December 31, 2021 and 2019, we recognized $49.4 million and $7.5 million increase in the estimated fair value of warrant liability, respectively, as a loss in other income (expense) in our consolidated statements of operations. For the year ended December 31, 2020, we recognized $4.1 million decrease in the estimated fair value of warrant liability as income in other income (expense) in our consolidated statements of operations.

15. Equity Plans and Stock-Based Compensation

Equity Plans

In January 2021, we adopted the Dynavax Technologies Corporation 2021 Inducement Award Plan ("2021 Inducement Plan"), pursuant to which we reserved 1,500,000 shares of common stock for issuance under the plan to be used exclusively for grants of awards to individuals who were not previously employees or directors of the Company. In June 2021, we amended the 2021 Inducement Plan ("Amended 2021 Inducement Plan") to increase the number of shares of common stock reserved under the 2021 Inducement Plan to 3,250,000.

As of December 31, 2021, the 2018 Equity Incentive Plan, as amended, ("Amended 2018 EIP"), the Amended 2021 Inducement Plan and the Amended and Restated 2014 Employee Stock Purchase Plan are our active plans. Under the Amended 2018 EIP, the aggregate number of shares of our common stock that may be issued to employees and directors (subject to adjustment for certain changes in capitalization) is 22,517,869.

The Amended 2018 EIP is administered by our Board of Directors, or a designated committee of the Board of Directors, and awards granted under the Amended 2018 EIP have a term of 7 years unless earlier terminated by the Board of Directors. As of December 31, 2021, there were 4,851,391 shares of common stock reserved for issuance under the Amended 2018 EIP.

Activity under our stock plans is set forth below:

	Shares Underlying Outstanding Options (in thousands)	Weighted-Average Exercise Price Per Share	Weighted-Average Remaining Contractual Term (years)	Aggregate Intrinsic Value (in thousands)
Balance at December 31, 2020	8,505	$ 11.57		
Options granted	3,894	10.49		
Options exercised	(1,035)	6.46		
Options cancelled:				
Options forfeited (unvested)	(521)	8.13		
Options expired (vested)	(444)	18.48		
Balance at December 31, 2021	10,399	$ 11.55	4.16	$ 42,756
Vested and expected to vest at December 31, 2021	10,029	$ 11.57	4.08	$ 41,321
Exercisable at December 31, 2021	5,796	$ 13.07	2.64	$ 20,488

The total intrinsic value of stock options exercised during the years ended December 31, 2021, 2020 and 2019 was $7.9 million, $0.1 million and $26,000, respectively. The total intrinsic value of exercised stock options is calculated based on the difference between the exercise price and the quoted market price of our common stock as of the close of the exercise date.

The total fair value of stock options vested during the years ended December 31, 2021, 2020 and 2019 was $9.0 million, $13.8 million and $19.5 million, respectively.

Our non-vested stock awards are comprised of restricted stock units granted with performance and time-based vesting criteria. A summary of the status of non-vested restricted stock units as of December 31, 2021, and activities during 2021 are summarized as follows:

	Number of Shares (In thousands)	Weighted-Average Grant-Date Fair Value
Non-vested as of December 31, 2020	1,794	$ 7.23
Granted	1,818	9.50
Vested	(537)	8.85
Forfeited	(424)	8.21
Non-vested as of December 31, 2021	2,651	$ 8.30

Stock-based compensation expense related to restricted stock units was approximately $7.9 million for the year ended December 31, 2021. The aggregate intrinsic value of the restricted stock units outstanding as of December 31, 2021, based on our stock price on that date, was $37.3 million.

The total fair value of restricted stock units vested during the years ended December 31, 2021, 2020 and 2019 was $4.7 million, $4.9 million and $7.9 million, respectively.

We granted performance-based restricted stock unit ("PSU") to certain executives in February 2021. These PSUs vest upon a specified market condition. The summary of PSU activities for the year ended December 31, 2021 is as follows:

	Number of Shares (in thousands)	Weighted-Average Grant-Date Fair Value Per Share
Non-vested as of December 31, 2020	-	$ -
Granted	297	8.40
Forfeited	(60)	8.40
Non-vested as of December 31, 2021	237	$ 8.40

Stock-based compensation expense related to PSUs was approximately $1.8 million for the year ended December 31, 2021. The aggregate intrinsic value of the PSUs outstanding as of December 31, 2021, based on our stock price on that date, was $3.3 million. None of the PSUs vested as of December 31, 2021.

Stock-Based Compensation

Under our stock-based compensation plans, option awards generally vest over a three-year or four-year period contingent upon continuous service and unless exercised, expire seven or ten years from the date of grant (or earlier upon termination of continuous service).

The fair value of each option is estimated on the date of grant using the Black-Scholes option valuation model. The fair value of each RSU is determined at the date of grant using our closing stock price. The fair value of each PSU is estimated using the Monte Carlo simulation method on the date of grant. The weighted-average assumptions used in the calculations of these fair value measurements are as follows:

	Stock Options			Market-Based Performance Stock Unit ("PSUs")	Employee Stock Purchase Plan		
	Year Ended December 31,			Year Ended December 31,	Year Ended December 31,		
	2021	2020	2019	2021	2021	2020	2019
Weighted-average fair value	$ 7.17	$ 3.91	$ 4.58	$ 8.40	$ 6.48	$ 2.82	$ 2.72
Risk-free interest rate	0.7%	1.0%	2.1%	From 0.03% to 1.92%	0.1%	0.9%	1.9%
Expected life (in years)	4.5	4.5	4.5	2.9	1.2	1.2	1.2
Expected Volatility	0.9	0.9	0.9	0.9	1.0	0.7	0.7

Expected volatility is based on historical volatility of our stock price. The expected life of options granted is estimated based on historical option exercise and employee termination data. Our senior management, who hold a majority of the options outstanding, and other employees were grouped and considered separately for valuation purposes. The risk-free rate for periods within the contractual life of the option is based on the U.S. treasury yield curve in effect at the time of grant. Forfeiture estimates are based on historical employee turnover. The dividend yield is zero percent for all years and is based on our history and expectation of dividend payouts.

Compensation expense is based on awards ultimately expected to vest and reflects estimated forfeitures. For equity awards with time-based vesting, the fair value is amortized to expense on a straight-line basis over the vesting periods. Stock-based compensation for the year ended December 31, 2020 included reversal of expenses related to cancellation of certain equity grants in the first quarter of 2020. Stock-based compensation cost for the year ended December 31, 2019 includes incremental cost of $4.1 million for accelerated vesting of stock awards and extension of exercise period of stock options in connection with the retirement of our Chief Executive Officer. See Note 17.

The Company has also granted performance-based equity awards to certain of our employees. For equity awards with performance-based vesting criteria, the fair value is amortized to expense when the achievement of the vesting criteria becomes probable. No stock-based compensation expense for awards with performance-based vesting criteria was recognized during the year ended December 31, 2021. We recognized stock-based compensation expense for awards with performance-based vesting criteria during the years ended December 31, 2020 and 2019 of $0.1 million and $0.5 million, respectively. As of December 31, 2021, approximately 117,000 shares underlying stock options and approximately 202,050 restricted stock unit awards with performance-based vesting criteria were outstanding. None of the awards with performance-based vesting criteria were deemed probable as of December 31, 2021.

We recognized the following amounts of stock-based compensation expense (in thousands):

	Year Ended December 31,		
	2021	2020	2019
Employees and directors stock-based compensation expense	$ 21,285	$ 13,484	$ 25,456

	Year Ended December 31,		
	2021	2020	2019
Research and development	$ 3,818	$ 1,000	$ 8,058
Selling, general and administrative	14,894	9,585	10,224
Cost of sales - product	553	619	1,088
Inventory	2,020	2,280	1,964
Restructuring	-	-	4,122
Total	$ 21,285	$ 13,484	$ 25,456

As of December 31, 2021, the total unrecognized compensation cost related to non-vested stock options and awards deemed probable of vesting, including all stock options with time-based vesting, net of estimated forfeitures, amounted to $33.0 million, which is expected to be recognized over the remaining weighted-average vesting period of 2 years. As of December 31, 2021, the total unrecognized compensation cost related to equity awards with performance-based vesting criteria amounted to $1.0 million. As of December 31, 2021, the total unrecognized compensation cost related to PSUs amounted to $0.2 million.

Employee Stock Purchase Plan

The Amended and Restated 2014 Employee Stock Purchase Plan (the “Employee Stock Purchase Plan”) provides for the purchase of common stock by eligible employees. In May 2021, our stockholders approved the amendment and restatement of the Employee Stock Purchase Plan to increase the authorized number of shares of common stock by 1,000,000. The maximum number of shares of common stock that may be issued under the Employee Stock Purchase Plan will not exceed 1,850,000 shares of common stock.

The purchase price per share is the lesser of (i) 85% of the fair market value of the common stock on the commencement of the two-year offer period (generally, the sixteenth day in February or August) or (ii) 85% of the fair market value of the common stock on the exercise date, which is the last day of a purchase period (generally, the fifteenth day in February or August). For the year ended December 31, 2021, employees have acquired 217,270 shares of our common

stock under the Employee Stock Purchase Plan and 1,038,313 shares of our common stock remained available for future purchases under the Employee Stock Purchase Plan.

As of December 31, 2021, the total unrecognized compensation cost related to shares of our common stock under the Employee Stock Purchase Plan amounted to $1.1 million, which is expected to be recognized over the remaining weighted-average vesting period of 1.5 years.

16. Employee Benefit Plan

We maintain a 401(k) Plan, which qualifies as a deferred salary arrangement under Section 401(k) of the Internal Revenue Code. Under the 401(k) Plan, participating employees may defer a portion of their pretax earnings. We may, at our discretion, contribute for the benefit of eligible employees. The Company's contribution to the 401(k) Plan was approximately $0.3 million, $0.2 million and $0.3 million for the years ended December 31, 2021, 2020 and 2019, respectively.

17. Restructuring

On May 23, 2019, we implemented a strategic organizational restructuring, principally to align our operations around our vaccine business and significantly curtail further investment in our immuno-oncology business. In connection with the restructuring, we reduced our workforce by approximately 80 positions, or approximately 36%, of U.S.-based personnel. Also, in connection with the restructuring, our Chief Executive Officer, also a member of the Board of Directors (the "Board"), submitted notice of his retirement from the Company and the Board, effective August 1, 2019. As of December 31, 2020, we have completed our restructuring activities and all costs have been incurred.

The major components of our restructuring costs are summarized as follows (in thousands):

Components of Restructuring Costs	Restructuring Costs Incurred for the Year Ended December 31, 2019
Severance and other termination benefits	$ 6,277
Stock-based compensation expense (a)	4,122
Accelerated depreciation	2,957
Total restructuring cost	$ 13,356

(a) As a result of accelerated vesting of stock awards and the extension of exercise period of stock options

18. Income Taxes

Consolidated income (loss) before provision for income taxes consisted of the following (in thousands):

	Year Ended December 31,		
	2021	2020	2019
U.S.	$ 75,954	$ (76,324)	$ (154,605)
Non U.S.	1,567	1,084	2,005
Total	$ 77,521	$ (75,240)	$ (152,600)

There was no income tax provision for the years ended December 31, 2020 and 2019. The components of the consolidated income tax provision for the year ended December 31, 2021 were as follows (in thousands):

	Year Ended December 31, 2021
Current	
Federal	$ 345
State	260
Non-US	203
Total current tax expense	808
Deferred	
Federal	-
State	-
Non-US	-
Total deferred tax expense	-
Total income tax expense	$ 808

No income tax expense was recorded for the years ended December 31, 2020 and 2019 due to a full valuation allowance. The difference between the consolidated income tax provision (benefit) and the amount computed by applying the federal statutory income tax rate to the consolidated income before income taxes was as follows (in thousands):

	Year Ended December 31,		
	2021	2020	2019
Income tax provision (benefit) at federal statutory rate	$ 16,397	$ (15,756)	$ (32,046)
State tax	3,576	(3,194)	(3,153)
Business credits	(982)	(773)	(1,757)
Uncertain tax positions	424	193	5,426
Deferred compensation charges	131	809	4,600
Change in valuation allowance	(86,847)	19,009	22,715
Section 162(m) limitation	1,241	473	2,439
Mark-to-market of warrants	10,364	(866)	1,575
Net operating loss and tax credit limitation	56,459	-	-
Other	45	105	201
Total income tax expense	$ 808	$ -	$ -

Deferred tax assets and liabilities consisted of the following (in thousands):

	December 31,	
	2021	2020
Deferred tax assets:		
Net operating loss carryforwards	$ 155,503	$ 224,161
Research credit carryforwards	12,870	28,578
Lease liability	8,515	-
Stock compensation	5,798	-
Accruals and reserves	5,792	17,264
Other	212	3,250
Total deferred tax assets	188,690	273,253
Less valuation allowance	(179,253)	(266,100)
Net deferred tax assets	9,437	7,153
Deferred tax liabilities:		
Fixed assets	(3,283)	(275)
Operating lease right-of-use assets	(6,124)	(6,878)
Other	(30)	-
Total deferred tax liabilities	(9,437)	(7,153)
Net deferred tax assets	$ -	$ -

The tax benefit of net operating losses, temporary differences and credit carryforwards is required to be recorded as an asset to the extent that management assesses that realization is "more likely than not." Realization of the future tax benefits is dependent on our ability to generate sufficient taxable income within the carryforward period. A high degree of judgment is required to determine if, and the extent to which, valuation allowances should be recorded against deferred tax assets. In making such determination, we consider all available positive and negative evidence, including future reversals of existing taxable temporary differences, projected future taxable income, tax planning strategies and recent financial operations. Based on all available evidence, both positive and negative, and the weight of that evidence to the extent such evidence can be objectively verified, management believes that recognition of the deferred tax assets arising from the above-mentioned future tax benefits is currently not more likely than not to be realized and, accordingly, has provided a valuation allowance. Given our current earnings, management believes that, within the next twelve months, sufficient positive evidence may become available to allow management to reach a conclusion that a portion of the valuation allowance recorded against the deferred tax assets held may be reversed. A reversal would result in an income tax benefit for the quarterly and annual fiscal period in which we release the valuation allowance. However, the exact timing and amount of a valuation allowance release are subject to change on the basis of the level of profitability that we actually achieve.

The valuation allowance decreased by $86.8 million during the year ended December 31, 2021 and increased by $19.0 million during the year ended December 31, 2020. The decrease in valuation allowance during the year ended December 31, 2021 was due to a decrease in our deferred tax assets, predominantly related to utilization of net operating losses and Section 382 limitations.

As of December 31, 2021, we had federal net operating loss carryforwards of approximately $303.8 million which begin to expire in the year 2022, federal net operating loss carryforwards of approximately $333.4 million, which do not expire and federal research and development tax credits of approximately $1.9 million, which expire in the years 2022 through 2041.

As of December 31, 2021, we had net operating loss carryforwards for California and other states for income tax purposes of approximately $345.9 million, which expire in the years 2022 through 2041, and California state research and development tax credits of approximately $19.6 million, which do not expire.

As of December 31, 2021, we had net operating loss carryforwards for foreign income tax purposes of approximately $3.5 million, which do not expire.

Uncertain Income Tax positions

The total amount of unrecognized tax benefits was $5.6 million and $10.6 million as of December 31, 2021 and 2020, respectively. If recognized, none of the unrecognized tax benefits would affect the effective tax rate.

The following table summarizes the activity related to our unrecognized tax benefits:

Balance at December 31, 2020	$ (10,565)
Tax positions related to the current year	
Additions	(308)
Reductions	-
Tax positions related to the prior year	
Additions	-
Reductions	5,258
Settlements	-
Lapses in statute	-
Balance at December 31, 2021	$ (5,615)

Our policy is to account for interest and penalties as income tax expense. As of December 31, 2021, there was no interest and $0.2 million of penalties recognized in the provision for income taxes. As of December 31, 2020, there was no interest or penalties related to unrecognized tax benefits recognized in the provision for income taxes. We do not anticipate any significant change within 12 months of this reporting date of its uncertain tax positions.

The Tax Reform Act of 1986 limits the annual use of net operating loss and tax credit carryforwards in certain situations where changes occur in stock ownership of a company. In the event there is a change in ownership, as defined, the annual utilization of such carryforwards could be limited. Based on an analysis under Section 382 of the Internal Revenue Code, completed through December 31, 2021, we experienced ownership changes in 2008, 2009, 2012, and 2019 which limit the future use of our pre-change federal and state net operating loss carryforwards and federal research and development tax credits. We excluded the net operating loss carryforwards and research and development tax credits that will expire as a result of the annual limitations in the deferred tax assets and corresponding uncertain tax positions as of December 31, 2021.

We are subject to income tax examinations for U.S. federal and state income taxes from 2002 forward. We are subject to tax examination in Germany from 2018 forward and in India from 2019 forward.

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

None.

ITEM 9A. CONTROLS AND PROCEDURES

(a) Evaluation of Disclosure Controls and Procedures

We maintain disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934 ("the Exchange Act")) that are designed to ensure that information required to be disclosed in our Exchange Act reports is recorded, processed, summarized and reported within the time periods specified in the Securities and Exchange Commission rules and forms and that such information is accumulated and communicated to our management, including our Chief Executive Officer and Principal Financial Officer, as appropriate, to allow for timely decisions regarding required disclosure. In designing and evaluating the disclosure controls and procedures, management recognizes that any controls and procedures, no matter how well designed and operated, can only provide reasonable, not absolute, assurance of achieving the desired control objectives.

Based on their 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 report, our management, with the participation of our Chief Executive Officer and our Chief Financial Officer, concluded that our disclosure controls and procedures are effective and were operating at the reasonable assurance level to ensure that information required to be disclosed by us in reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the Securities and Exchange Commission rules and forms.

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

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act. Our management, with the participation of our Chief Executive Officer and Chief Financial Officer, conducted an evaluation of the effectiveness of our internal control over financial reporting based on the framework in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 Framework). Based on that evaluation, our management concluded that our internal control over financial reporting was effective as of December 31, 2021. The Company's independent registered public accountants, Ernst & Young LLP, audited the consolidated financial statements included in this Annual Report on Form 10-K and have issued a report on the Company's internal control over financial reporting. The report on the audit of internal control over financial reporting appears below.

Report of Independent Registered Public Accounting Firm

To the Stockholders and the Board of Directors of Dynavax Technologies Corporation

Opinion on Internal Control over Financial Reporting

We have audited Dynavax Technologies Corporation's internal control over financial reporting as of December 31, 2021, based on criteria established in Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). In our opinion, Dynavax Technologies Corporation (the Company) maintained, in all material respects, effective internal control over financial reporting as of December 31, 2021, based on the COSO criteria.

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, 2021 and 2020, and the related consolidated statements of operations, comprehensive income (loss), stockholders' equity and cash flows for each of the three years in the period ended December 31, 2021 and the related notes of the Company and our report dated February 28, 2022 expressed an unqualified opinion thereon.

Basis for Opinion

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

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

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

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

/s/ Ernst & Young LLP

San Francisco, California
February 28, 2022

(c) Changes in Internal Control Over Financial Reporting

There has been no change in our internal control over financial reporting during our most recent fiscal quarter that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

ITEM 9B. OTHER INFORMATION

None.

ITEM 9C. DISCLOSURE REGARDING FOREIGN JURISDICTIONS THAT PREVENT INSPECTIONS

None.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

Information required by this Item is incorporated by reference to the sections entitled "Proposal 1—Elections of Directors," "Executive Officers," "Corporate Governance" and "Delinquent Section 16(a) Reports" in our Definitive Proxy Statement in connection with the 2022 Annual Meeting of Stockholders (the "Proxy Statement") which will be filed with the Securities and Exchange Commission within 120 days after the fiscal year ended December 31, 2021.

We have adopted the Dynavax Code of Business Conduct and Ethics ("Code of Conduct"), a code of ethics that applies to our employees, including our Chief Executive Officer, Chief Financial Officer and to our non-employee directors. The Code of Conduct is publicly available on our website under the Investors and Media section at www.dynavax.com. This website address is intended to be an inactive, textual reference only; none of the material on this website is part of this report. If any substantive amendments are made to the Code of Conduct or any waiver granted, including any implicit waiver, from a provision of the Code of Conduct to our Chief Executive Officer or Chief Financial Officer, we will disclose the nature of such amendment or waiver on that website or in a report on Form 8-K. We will provide a written copy of the Dynavax Code of Conduct to anyone without charge, upon request written to Dynavax, Attention: Corporate Secretary, 2100 Powell Street, Suite 900, Emeryville, CA 94608, (510) 848-5100.

ITEM 11. EXECUTIVE COMPENSATION

Information required by this Item is incorporated by reference to the section entitled "Compensation Discussion and Analysis," "Summary Compensation Table," "Grants of Plan Based Awards," "Outstanding Equity Awards at Fiscal Year End," and "Corporate Governance" in the Proxy Statement.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

Information regarding security ownership of certain beneficial owners and management is incorporated by reference to the section entitled "Security Ownership of Certain Beneficial Owners and Management" in the Proxy Statement. Information regarding our stockholder approved and non-approved equity compensation plans are incorporated by reference to the section entitled "Equity Compensation Plans" in the Proxy Statement.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

Information required by this Item is incorporated by reference to the sections entitled "Certain Transactions With Related Parties" and "Independence of the Board of Directors" in the Proxy Statement.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

Information required by this Item is incorporated by reference to the section entitled "Audit Fees" in the Proxy Statement.

PART IV

ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES

(a) Documents filed as part of this report:

1. Financial Statements

Report of Independent Registered Public Accounting Firm

Consolidated Balance Sheets

Consolidated Statements of Operations

Consolidated Statements of Comprehensive Income (Loss)

Consolidated Statements of Stockholders' Equity

Consolidated Statements of Cash Flows

Notes to Consolidated Financial Statements

2. Financial Statement Schedules

None, as all required disclosures have been made in the Consolidated Financial Statements and notes thereto or are not applicable.

(b) Exhibits

		Incorporated by Reference				
Exhibit Number	Document	Exhibit Number	Filing	Filing Date	File No.	Filed Herewith
3.1	Sixth Amended and Restated Certificate of Incorporation	3.1	S-1/A	February 5, 2004	333-109965	
3.2	Certificate of Amendment of Amended and Restated Certificate of Incorporation	3.1	8-K	January 4, 2010	001-34207	
3.3	Certificate of Amendment of Amended and Restated Certificate of Incorporation	3.1	8-K	January 5, 2011	001-34207	
3.4	Certificate of Amendment of Amended and Restated Certificate of Incorporation	3.6	8-K	May 30, 2013	001-34207	
3.5	Certificate of Amendment of the Sixth Amended and Restated Certificate of Incorporation	3.1	8-K	November 10, 2014	001-34207	
3.6	Certificate of Amendment of the Sixth Amended and Restated Certificate of Incorporation	3.1	8-K	June 2, 2017	001-34207	
3.7	Certificate of Amendment of the Sixth Amended and Restated Certificate of Incorporation	3.1	8-K	July 31, 2017	001-34207	

3.8	Certificate of Amendment of the Sixth Amended and Restated Certificate of Incorporation	3.1	8-K	May 29, 2020	001-34207	
3.9	Amended and Restated Bylaws	3.8	10-Q	November 6, 2018	001-34207	
4.1	Description of Capital Stock	4.1	10-K			X
4.2	Reference is made to Exhibits 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8 and 3.9 above					
4.3	Form of Specimen Common Stock Certificate	4.2	S-1/A	January 16, 2004	333-109965	
4.5	Indenture between Company and U.S. Bank National Association, as trustee, dated May 13, 2021	4.1	8-K	May 13, 2021	001-34207	
4.6	Form of Global Note, representing Dynavax Technologies Corporation's 2.5% Convertible Senior Notes due 2026	4.2	8-K	May 13, 2021	001-34207	
10.1	Amended and Restated Purchase Option Agreement, dated November 9, 2009, between the Company and Symphony Dynamo Holdings LLC and Symphony Dynamo, Inc.	10.47	10-K	March 16, 2010	001-34207	
10.2[+]	Employment Agreement, dated July 12, 2013, by and between Robert Janssen, M.D. and the Company	10.85	10-K	March 10, 2014	001-34207	
10.3[+]	Form of Amended and Restated Management Continuity and Severance Agreement between the Company and certain of its executive officers	10.2	10-Q	August 7, 2019	001-34207	
10.4[†]	Commercial Manufacturing and Supply Agreement, dated November 22, 2013, between Company and Baxter Pharmaceutical Solutions LLC	10.33	10-K	March 8, 2018	001-34207	
10.5[†]	Supply Agreement, dated November 2, 2016, between Company and Becton, Dickinson and Company	10.34	10-K	March 8, 2018	001-34207	
10.6[†]	Supply Agreement, dated October 1, 2012, between Company and Nitto Denko Avecia, Inc.	10.35	10-K	March 8, 2018	001-34207	

10.7†	Supply Agreement, dated July 27, 2016, between Company and West Pharmaceutical Services, Inc.	10.36	10-K	March 8, 2018	001-34207	
10.8+	Amended and Restated 2018 Equity Incentive Plan	10.1	10-Q	August 6, 2020	001-34207	
10.9+	Form of Restricted Stock Unit Award Grant Notice and Restricted Stock Unit Award Agreement under the 2018 Equity Incentive Plan	10.2	8-K	June 1, 2018	001-34207	
10.10+	Form of Option Grant Notice and Option Agreement under the 2018 Equity Incentive Plan	10.3	8-K	June 1, 2018	001-34207	
10.11+	Restricted Stock Unit Award Agreement for Directors under the 2018 Equity Incentive Plan					X
10.12	Office/Laboratory Lease, dated September 17, 2018, between the Company and Emery Station West, LLC	10.1	10-Q	November 6, 2018	001-34207	
10.13+	Chief Executive Officer Letter, dated December 13, 2019, between the Company and Ryan Spencer	10.17	10-K	March 11, 2020	001-34207	
10.14+	President and Chief Operating Officer Letter, dated December 13, 2019, between the Company and David Novack	10.18	10-K	March 11, 2020	001-34207	
10.15+	Form of Indemnification Agreement	10.1	10-Q	November 7, 2019	001-34207	
10.16	Sublease, by and between Dynavax Technologies Corporation and MedAmerica, Inc. (d/b/a Vituity), dated July 2, 2019	10.2	10-Q	November 7, 2019	001-34207	
10.17	Sublease, by and between Dynavax Technologies Corporation and Zymergen Inc., dated July 12, 2019	10.3	10-Q	November 7, 2019	001-34207	
10.18+	Dynavax Technologies Corporation U.S. Annual Bonus Plan	10.23	10-K	March 11, 2020	001-34207	
10.19	Registration Rights Agreement, dated March 11, 2020, by and among the Company, Bain Capital Life Sciences Fund, L.P. and BCIP Life Sciences Associates, LP.	99.D	13D/A	March 12, 2020	005-80035	

10.20^	Supply Agreement, dated September 11, 2020, by and among the Company, Valneva Scotland Limited and Valneva Austria GmbH	10.2	10-Q	November 5, 2020	001-34207	
10.21^	Letter Agreement, dated October 29, 2021, by and among the Company, Valneva Scotland Limited and Valneva Austria GmbH					X
10.22+	Amended and Restated Management Continuity and Severance Agreement, dated September 22, 2020, between Michael S. Ostrach and the Company	10.3	10-Q	November 5, 2020	001-34207	
10.23	Sales Agreement, dated August 6, 2020, between the Company and Cowen and Company, LLC	10.3	10-Q	August 6, 2020	001-34207	
10.24^	Agreement, dated January 29, 2021 between Company and Coalition for Epidemic Preparedness Innovations	10.31	10-K	February 25, 2021	001-34207	
10.25+	Offer Letter, dated December 14, 2020, by and between the Company and Kelly MacDonald	10.33	10-K	February 25, 2021	001-34207	
10.26^	First Amendment to Agreement, dated May 3, 2021, by and between the Company and Coalition for Epidemic Preparedness Innovations	10.1	10-Q	August 4, 2021	001-34207	
10.27+	Amended and Restated Dynavax Technologies Corporation 2021 Inducement Award Plan	10.3	10-Q	August 4, 2021	001-34207	
10.28+	Dynavax Technologies Corporation Amended and Restated 2014 Employee Stock Purchase Plan	Appendix A	DEF 14A	April 16, 2021	001-34207	
10.29	Form of Confirmation for Capped Call Transactions	10.1	8-K	May 13, 2021	001-34207	
10.30^	Supply Agreement, dated June 29, 2021, by and among Company, Zhejiang Clover Biopharmaceuticals, Inc., and Clover Biopharmaceuticals (Hong Kong) Co., Limited	10.6	10-Q	August 4, 2021	001-34207	

10.31^	Supply Agreement, dated July 1, 2021, by and between Company and Biological E. Limited	10.7	10-Q	August 4, 2021	001-34207	
10.32	Commercial Lease Agreement, dated September 13, 2021, by and between Onyx Düsseldorf S.à r.l. and Dynavax GmbH	10.2	10-Q	November 4, 2021	001-34207	
10.33^	First Amendment to Commercial Manufacturing and Supply Agreement, dated September 10, 2021, by and between Baxter Pharmaceutical Solutions LLC and Dynavax Technologies Corporation	10.3	10-Q	November 4, 2021	001-34207	
10.34+	Non-Employee Director Compensation Policy					X
21.1	List of Subsidiaries					X
23.1	Consent of Independent Registered Public Accounting Firm					X
31.1	Certification of Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002					X
31.2	Certification of Principal Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002					X
32.1*	Certification of Chief Executive Officer to Section 906 of the Sarbanes-Oxley Act of 2002					X
32.2*	Certification of Principal Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002					X

EX—101.INS Inline XBRL Instance Document - the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.
EX—101.SCH Inline XBRL Taxonomy Extension Schema Document
EX—101.CAL Inline XBRL Taxonomy Extension Calculation Linkbase Document
EX—101.DEF Inline XBRL Taxonomy Extension Definition Linkbase
EX—101.LAB Inline XBRL Taxonomy Extension Labels Linkbase Document
EX—101.PRE Inline XBRL Taxonomy Extension Presentation Linkbase Document

EX—104 The cover page for the Company's Annual Report on Form 10-K for the year ended December 31, 2019, has been formatted in Inline XBRL

† We have been granted confidential treatment with respect to certain portions of this agreement. Omitted portions have been filed separately with the Securities and Exchange Commission.
+ Indicates management contract, compensatory plan or arrangement.
^ Certain portions of this exhibit (indicated by asterisks) have been omitted as the Registrant has determined that (i) the omitted information is not material and (ii) the omitted information would likely cause competitive harm to the Registrant if

publicly disclosed. The Registrant agrees to furnish supplementally an unredacted copy of any exhibit to the Securities and Exchange Commission upon request; provided, however, that the Registrant may request confidential treatment of omitted items.

* The certifications attached as Exhibits 32.1 and 32.2 that accompany this Annual Report on Form 10-K, are not deemed filed with the Securities and Exchange Commission and are not to be incorporated by reference into any filing of the Company under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended (whether made before or after the date of this Form 10-K), irrespective of any general incorporation language contained in such filing.

ITEM 16. FORM 10-K SUMMARY

None.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has caused this report to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Emeryville, State of California.

DYNAVAX TECHNOLOGIES CORPORATION

By: /s/ RYAN SPENCER

Ryan Spencer
Chief Executive Officer
(Principal Executive Officer)

Date: February 28, 2022

By: /s/ KELLY MACDONALD

Kelly MacDonald
Chief Financial Officer
(Principal Financial Officer)

Date: February 28, 2022

By: /s/ JUSTIN BURGESS

Justin Burgess
Controller
(Principal Accounting Officer)

Date: February 28, 2022

Signature	Title	Date
/s/ RYAN SPENCER **Ryan Spencer**	Chief Executive Officer *(Principal Executive Officer)*	February 28, 2022
/s/ KELLY MACDONALD **Kelly MacDonald**	Chief Financial Officer *(Principal Financial Officer)*	February 28, 2022
/s/ JUSTIN BURGESS **Justin Burgess**	Controller *(Principal Accounting Officer)*	February 28, 2022
/s/ SCOTT MYERS **Scott Myers**	Chairman of the Board	February 28, 2022
/s/ FRANCIS R. CANO **Francis R. Cano, Ph.D.**	Director	February 28, 2022
/s/ JULIE EASTLAND **Julie Eastland**	Director	February 28, 2022
/s/ ANDREW HACK **Andrew Hack, M.D., Ph.D.**	Director	February 28, 2022
/s/ DANIEL L. KISNER **Daniel L. Kisner, M.D.**	Director	February 28, 2022
/s/ BRENT MACGREGOR **Brent MacGregor**	Director	February 28, 2022
/s/ PETER R. PARADISO **Peter R. Paradiso**	Director	February 28, 2022
/s/ PEGGY V. PHILLIPS **Peggy V. Phillips**	Director	February 28, 2022
/s/ NATALE S. RICCIARDI **Natale S. Ricciardi**	Director	February 28, 2022
/s/ ELAINE D. SUN **Elaine D. Sun**	Director	February 28, 2022

[This page intentionally left blank]

BOARD OF DIRECTORS

Scott Myers
Chairperson of the Board
Former Chief Executive Officer and Director
AMAG Pharmaceuticals, Inc.

Francis R. Cano, Ph.D.
President and Founder
Cano Biotech Corporation

Julie Eastland
Chief Executive Officer
Harpoon Therapeutics

Andrew Hack, M.D., Ph.D.
Managing Director
Bain Capital Life Sciences, L.P.

Daniel L. Kisner, M.D.
Former Partner
Aberdare Ventures

Brent MacGregor
Chief Executive Officer
Medical Developments Intl. Ltd.

Peter Paradiso, Ph.D.
Former Vice President,
New Business and Scientific Affairs
Pfizer Vaccines

Peggy V. Phillips
Former Chief Operating Officer
Immunex Corporation

Natale Ricciardi
Former Senior Vice President
Pfizer, Inc.

Ryan Spencer
Chief Executive Officer and Director
Dynavax Technologies Corporation

Elaine Sun
Chief Financial Officer and Chief Operating Officer
Mammoth Biosciences, Inc.

MANAGEMENT

Ryan Spencer
Chief Executive Officer and Director

David Novack
President and
Chief Operating Officer

Kelly MacDonald
Senior Vice President,
Chief Financial Officer

Jeff Coon
Chief Human
Resources Officer

Robert Janssen, M.D.
Chief Medical Officer and Senior Vice President, Clinical Development, Medical and Regulatory Affairs

Donn Casale
Senior Vice President,
Commercial

Todd Lopeman
Senior Vice President, Technical Operations

John L. Slebir
Senior Vice President, General Counsel

Dong Yu
Senior Vice President, Vaccine Research

CORPORATE HEADQUARTERS

Dynavax Technologies Corporation
2100 Powell Street, Suite 900
Emeryville, California 94608
U.S.A.
Tel: 510-848-5100
Fax: 510-848-1327
E-mail: contact@dynavax.com
www.dynavax.com

EUROPEAN OPERATIONS

Dynavax GmbH
Eichsfelder Str. 11
40595 Düsseldorf
Germany
Tel: +49 (0) 211 7 58 45 0

CORPORATE COUNSEL

Cooley LLP
Palo Alto, CA

TRANSFER AGENT

Computershare Inc.
P.O. Box 43070
Providence, RI 02940-3070

or

250 Royall Street
Canton, MA 02021
Tel: 800-522-6645

TDD for Hearing Impaired:
800-231-5469
Outside of the U.S.: 201-680-6578

TDD Outside of the U.S.:
201-680-6610

www.computershare.com

INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Ernst & Young LLP
San Francisco, CA

STOCK INFORMATION

The common stock of the company is traded on the NASDAQ Capital Market under the symbol DVAX

BR268158-0422-COMBO