

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

SCHEDULE 14A

Proxy Statement Pursuant to Section 14(a) of
the Securities Exchange Act of 1934

Filed by the Registrant

Filed by a Party other than the Registrant

Check the appropriate box:

- Preliminary Proxy Statement
- Confidential, for Use of the Commission Only (as permitted by Rule 14a-6(e)(2))**
- Definitive Proxy Statement
- Definitive Additional Materials
- Soliciting Material under §240.14a-12

Genocea Biosciences, Inc.

(Name of Registrant as Specified In Its Charter)

(Name of Person(s) Filing Proxy Statement, if other than the Registrant)

Payment of Filing Fee (Check the appropriate box):

- No fee required.
- Fee computed on table below per Exchange Act Rules 14a-6(i)(1) and 0-11.
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- (3) Filing Party:
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**Genocea Biosciences, Inc.
100 Acorn Park Drive,
Cambridge, MA 02140**

NOTICE OF ANNUAL MEETING OF STOCKHOLDERS

The 2020 Annual Meeting of Stockholders of Genocea Biosciences, Inc. (the "Company" or "Genocea") will be held on June 1, 2020, at 9:00 a.m. EST. We have adopted a virtual format for our Annual Meeting to provide a consistent experience to all stockholders regardless of location. We will provide a live webcast of the Annual Meeting at www.virtualshareholdermeeting.com/GNCA2020. The meeting will be held for the following purposes:

1. To elect Mr. William Clark, Mr. Ronald Cooper and Dr. George Siber as Class III directors, each for a three-year term;
2. To approve an amendment to the Company's restated certificate of incorporation to provide for an increase in the total number of shares of common stock that the Company is authorized to issue from 85,000,000 shares to 170,000,000 shares;
3. To approve an amendment to the Genocea Biosciences, Inc. Amended and Restated 2014 Equity Incentive Plan to increase the number of shares of the Company's common stock reserved for issuance thereunder by 2,800,000 shares, to increase the individual non-employee director share limit contained in the plan and to remove the other individual participant limits contained in the plan;
4. To approve, on an advisory basis, the compensation paid to our named executive officers;
5. To approve, on an advisory basis, the frequency of future advisory votes on the compensation paid to our named executive officers;
6. To ratify the appointment of Ernst & Young LLP as the independent registered public accounting firm for the Company for the fiscal year ending December 31, 2020; and
7. To consider and act upon any other matters that properly come before the Annual Meeting or any adjournment or postponement thereof.

Each outstanding share of the Company's common stock (Nasdaq: GNCA) entitles the holder of record at the close of business on April 6, 2020, to receive notice of and to vote at the Annual Meeting or any adjournment or postponement of the Annual Meeting.

Due to the ongoing public health impact of the coronavirus outbreak (COVID-19) and to support the health and well-being of our directors, employees and stockholders, our Annual Meeting will be a completely virtual meeting of stockholders, which will be conducted via live webcast. You will be able to attend the Annual Meeting online and submit your questions during the meeting by visiting www.virtualshareholdermeeting.com/GNCA2020. You will also be able to vote your shares electronically at the Annual Meeting. Details regarding how to attend the meeting online are more fully described in the Notice of Meeting and proxy statement.

WHETHER OR NOT YOU EXPECT TO ATTEND THE ANNUAL MEETING, WE URGE YOU TO VOTE YOUR SHARES BY FOLLOWING THE INSTRUCTIONS TO THE IMPORTANT NOTICE REGARDING THE AVAILABILITY OF PROXY MATERIALS THAT YOU PREVIOUSLY RECEIVED AND SUBMIT YOUR PROXY BY INTERNET, TELEPHONE, OR BY SIGNING, DATING AND RETURNING THE PROXY CARD INCLUDED IN THESE MATERIALS. IF YOU CHOOSE TO ATTEND THE ANNUAL MEETING, YOU MAY STILL VOTE YOUR SHARES, EVEN THOUGH YOU HAVE PREVIOUSLY VOTED OR RETURNED YOUR PROXY BY ANY OF THE METHODS DESCRIBED IN OUR PROXY STATEMENT. IF YOUR SHARES ARE HELD IN A BANK OR BROKERAGE ACCOUNT, PLEASE REFER TO THE MATERIALS PROVIDED BY YOUR BANK OR BROKER FOR VOTING INSTRUCTIONS.

ALL STOCKHOLDERS ARE EXTENDED AN INVITATION TO ATTEND THE ANNUAL MEETING.

By Order of the Board of Directors



William Clark

President and Chief Executive Officer

April 20, 2020

Genocea Biosciences, Inc.
100 Acorn Park Drive,
Cambridge, MA 02140

**PROXY STATEMENT FOR ANNUAL MEETING OF STOCKHOLDERS
To Be Held On June 1, 2020 at 9:00 am EST**

This proxy statement (the “Proxy Statement”), along with the accompanying Notice of 2020 Annual Meeting of Stockholders, contains information about the Annual Meeting, including any adjournments or postponements of the Annual Meeting. We are holding the Annual Meeting as a virtual meeting at 9:00 a.m. EST, at www.virtualshareholdermeeting.com/GNCA2020.

On or about April 20, 2020, we made available this Proxy Statement and the attached Notice of 2020 Annual Meeting of Stockholders to all stockholders entitled to vote at the Annual Meeting, and we began sending the proxy card and the Important Notice Regarding the Availability of Proxy Materials to all stockholders entitled to vote at the Annual Meeting. Although not part of this Proxy Statement, we have also made available with this Proxy Statement our Annual Report on Form 10-K for the fiscal year ended December 31, 2019 (the “Annual Report”), which includes our financial statements for the fiscal year ended December 31, 2019.

IMPORTANT NOTICE REGARDING THE AVAILABILITY OF PROXY MATERIALS FOR THE STOCKHOLDER MEETING TO BE HELD ON JUNE 1, 2020

This Proxy Statement and our Annual Report are available for viewing, printing and downloading at www.proxyvote.com. To view these materials, please have your 16-digit control number(s) available that appears on your proxy card.

Additionally, you can find a copy of our Annual Report on the website of the Securities and Exchange Commission (“SEC”) at www.sec.gov, or in the “Financials & Filings - Annual Reports and Proxies” tab of the “Investors” section of our website at www.genocea.com. You may also obtain a printed copy of our Annual Report, free of charge, by sending a written request to: Genocea Biosciences, Inc., 100 Acorn Park Drive, Cambridge, Massachusetts 02140, Attention: Secretary. Exhibits, if any, will be provided upon written request and payment of an appropriate processing fee.

GENERAL INFORMATION

When are this Proxy Statement and the accompanying material scheduled to be sent to stockholders?

On or about April 20, 2020, we began sending the Important Notice Regarding the Availability of Proxy Materials to all stockholders entitled to vote at the Annual Meeting.

Who is soliciting my vote?

The Board of Directors of the Company is soliciting your vote for the 2020 Annual Meeting of Stockholders.

When is the record date for the Annual Meeting?

The Company's Board of Directors has fixed the record date for the Annual Meeting as of the close of business on April 6, 2020.

Meeting Information

We will hold the Annual Meeting exclusively online via a live audio webcast at www.virtualshareholdermeeting.com/GNCA2020 at 9:00 a.m. EST on June 1, 2020, unless adjourned or postponed. There is no physical location for the Annual Meeting. Directions for accessing the virtual Annual Meeting can be found under the Investors section of our website at www.genocea.com.

Why a virtual Annual Meeting?

Due to the ongoing public health impact of the coronavirus outbreak (COVID-19) and to support the health and well-being of our directors, employees and stockholders, we are relying on the latest technology to host a virtual Annual Meeting. Stockholders will be able to attend the Annual Meeting online and submit questions by visiting www.virtualshareholdermeeting.com/GNCA2020. Stockholders will also be able to vote their shares electronically during the Annual Meeting.

How do I attend the Annual Meeting?

Our Annual Meeting will begin promptly at 9:00 a.m. EST in a virtual meeting format at www.virtualshareholdermeeting.com/GNCA2020. To participate in the Annual Meeting, you will need the 16-digit control number included in your Notice or on the instructions that accompanied your proxy materials. The meeting webcast will begin promptly at 9:00 a.m. EST. We encourage you to access the meeting prior to the start time. Online check-in will start shortly before the meeting, and you should allow ample time for the check-in procedures. Instructions should also be provided on the voting instruction card provided by your bank or brokerage firm. If you lose your 16-digit control number, you may join the Annual Meeting as a “Guest,” but you will not be able to vote, ask questions or access the list of stockholders as of the Record Date.

What if During the Check-In Time or During the Annual Meeting I have Technical Difficulties or Trouble Accessing the Virtual Meeting Website?

We will have technicians ready to assist you with any technical difficulties you may have accessing the virtual meeting website. If you encounter any difficulties accessing the virtual meeting website during the check-in or meeting time, please call the technical support number that will be posted on the Annual Meeting log-in page.

How many votes can be cast by all stockholders?

A total of 27,643,773 shares of common stock of the Company were outstanding on April 6, 2020 and are entitled to be voted at the Annual Meeting. Each share of common stock is entitled to one vote on each matter.

How do I vote?

If you are a stockholder of record and your shares are registered directly in your name, you may vote:

- **By Internet.** Access the website at www.proxyvote.com and follow the instructions provided on the Important Notice Regarding Availability of Proxy Materials on the proxy card. Your shares will be voted in accordance with your instructions. You must specify how you want your shares voted, or your Internet vote cannot be completed and you will receive an error message.
- **By Telephone.** Call 1-800-690-6903 toll-free and follow the instructions on the enclosed proxy card. Your shares will be voted in accordance with your instructions. You must specify how you want your shares voted, or your telephone vote cannot be completed.
- **By Mail.** Complete and mail the enclosed proxy card to Vote Processing, c/o Broadridge, 51 Mercedes Way, Edgewood, NY, 11717 in the enclosed postage prepaid envelope. Your proxy will be voted in accordance with your instructions. If you sign and return the enclosed proxy but do not specify how you want your shares voted, they will be voted (i) **FOR** the election as directors of the nominees named herein to the Company's Board of Directors, (ii) **FOR** approval of the amendment to our restated certificate of incorporation to increase the number of shares of common stock authorized for issuance from 85,000,000 shares to 170,000,000 shares; (iii) **FOR** approval of the amendment to the Genocoe Biosciences, Inc. Amended and Restated 2014 Equity Incentive Plan to increase the number of shares reserved for issuance thereunder by 2,800,000 shares, to increase the individual non-employee director share limit contained in the plan and to remove the other individual participant limits contained in this plan; (iv) **FOR** approval of the advisory vote on the compensation paid to our named executive officers; (v) **FOR** approval of the advisory vote on an annual frequency for future advisory votes on the compensation paid to our named executive officers; (vi) **FOR** the ratification of Ernst & Young LLP as the Company's independent registered public accounting firm for the fiscal year ending December 31, 2020, and (vii) will be voted according to the discretion of the proxy holder named in the proxy card upon any other business that may properly be brought before the Annual Meeting and at all adjournments and postponements thereof.
- **At the Annual Meeting.** The Annual Meeting will be held entirely online. To participate in the Annual Meeting, you will need the 16-digit control number included in your Notice or on the instructions that accompanied your proxy materials. The meeting webcast will begin promptly at 9:00 a.m. EST. We encourage you to access the meeting prior to the start time. Online check-in will start shortly before the meeting, and you should allow ample time for the check-in procedures. Instructions should also be provided on the voting instruction form provided by your bank, broker or other nominee. If you lose your 16-digit control number, you may join the Annual Meeting as a “Guest,” but you will not be able to vote, ask questions or access the list of stockholders as of the Record Date.

If your shares of common stock are held in street name (held for your account by a broker or other nominee):

- **By Internet or By Telephone.** You will receive instructions from your broker or other nominee if you are permitted to vote by Internet or telephone.
- **By Mail.** You will receive instructions from your broker or other nominee explaining how to vote your shares.
- **At the Annual Meeting.** The Annual Meeting will be held entirely online. To participate in the Annual Meeting, you will need the 16-digit control number included in your Notice or on the instructions that accompanied your proxy materials. The meeting webcast will begin promptly at 9:00 a.m. EST. We encourage you to access the meeting prior to the start time. Online check-in will start shortly before the meeting, and you should allow ample time for the check-in procedures. Instructions should also be provided on the voting instruction form provided by your bank, broker or other nominee. If you lose your 16-digit control number, you may join the Annual Meeting as a "Guest," but you will not be able to vote, ask questions or access the list of stockholders as of the Record Date.

Management, members of our board and representatives of Ernst & Young LLP are expected to attend the Annual Meeting and be available to respond to questions from shareholders.

What are the Board's recommendations on how to vote my shares?

The Board of Directors recommends a vote:

Proposal 1: FOR ALL election of the three Class III directors.

Proposal 2: FOR approving the amendment to our restated certificate of incorporation to provide for an increase in the total number of shares of common stock that the Company is authorized to issue from 85,000,000 shares to 170,000,000 shares.

Proposal 3: FOR approving the amendment to the Genocera Biosciences, Inc. Amended and Restated 2014 Equity Incentive Plan to increase the number of shares reserved for issuance thereunder by 2,800,000 shares, to increase the individual non-employee director share limit contained in the plan and to remove the other individual participant limits contained in this plan.

Proposal 4: FOR approving, on an advisory basis, the compensation paid to our named executive officers.

Proposal 5: FOR approving, on an advisory basis, an annual frequency for the advisory vote on the compensation paid to our named executive officers.

Proposal 6: FOR ratification of the appointment of Ernst & Young LLP as the Company's independent registered public accounting firm for the fiscal year 2020.

Who pays the cost for soliciting proxies?

Genocera will bear the cost of solicitation of proxies. This includes the charges and expenses of brokerage firms and others for forwarding solicitation material to beneficial owners of our outstanding common stock as well as support for hosting of the virtual Annual Meeting. Genocera may solicit proxies by mail, personal interview, telephone, or via the Internet through its officers, directors and other management employees, who will receive no additional compensation for their services.

Can I change my vote?

You may revoke your proxy at any time before it is voted by notifying the Secretary in writing, by returning a signed proxy with a later date, by transmitting a subsequent vote over the Internet or by telephone prior to the close of the Internet voting facility or the telephone voting facility, or by attending the Annual Meeting online. If your stock is held in street name, you must contact your broker or nominee for instructions as to how to change your vote.

How is a quorum reached?

The presence, online or by proxy, of holders of at least a majority of the total number of outstanding shares entitled to vote is necessary to constitute a quorum for the transaction of business at the Annual Meeting. Abstentions and "broker non-votes" (i.e., shares represented at the Annual Meeting held by brokers, bankers or other nominees as to which instructions have not been received from the beneficial owners or persons entitled to vote such shares and, with respect to one or more but not all issues,

such brokers or nominees do not have discretionary voting power to vote such shares), if any, will be counted for purposes of determining whether a quorum is present for the transaction of business at the Annual Meeting.

What vote is required to approve each item?

Directors are elected by a plurality of votes cast (Proposal 1). A vote to withhold or a broker non-vote will have no direct effect on the outcome. The affirmative vote of a majority of the shares of common stock outstanding and entitled to vote is necessary for the approval of the amendment to our restated certificate of incorporation (Proposal 2). A majority of votes cast is necessary for the approval of the amendment to the Genoclea Biosciences, Inc. Amended and Restated 2014 Equity Incentive Plan (Proposal 3). Because approval of the compensation paid to our named executive officers (Proposal 4) and the frequency of future advisory votes on the compensation paid to our named executive officers (Proposal 5) are advisory votes there is no “required” vote. We will consider a majority of votes cast to be approval for each of these proposals. A majority of votes cast is necessary for ratification of the selection of Ernst & Young LLP as the Company’s independent registered public accounting firm for the fiscal year ending December 31, 2020 (Proposal 6). A vote to abstain will have no direct effect on the outcome.

If there are insufficient votes to approve these proposals, your proxy may be voted by the persons named in the proxy card to adjourn the Annual Meeting in order to solicit additional proxies in favor of the approval of such proposals. If the Annual Meeting is adjourned or postponed for any purpose, at any subsequent reconvening of the Annual Meeting, your proxy will be voted in the same manner as it would have been voted at the original convening of the Annual Meeting unless you withdraw or revoke your proxy.

Could other matters be decided at the Annual Meeting?

Genoclea does not know of any other matters that may be presented for action at the Annual Meeting. Should any other business come before the Annual Meeting, the persons named on the enclosed proxy will have discretionary authority to vote the shares represented by such proxies in accordance with their best judgment. If you hold shares through a broker, bank or other nominee as described above, they will not be able to vote your shares on any other business that comes before the Annual Meeting unless they receive instructions from you with respect to such matter.

What happens if the Annual Meeting is postponed or adjourned?

Your proxy may be voted at the postponed or adjourned Annual Meeting. You will still be able to change your proxy until it is voted.

What does it mean if I receive more than one proxy card or voting instruction form?

It means that you have multiple accounts at the transfer agent or with brokers. Please complete and return all proxy cards or voting instruction forms to ensure that all of your shares are voted.

Who should I call if I have any additional questions?

If you hold your shares directly, please call Diantha Duvall, Secretary, at 617-876-8191. If your shares are held in street name, please contact the telephone number provided on your voting instruction form or contact your broker or nominee holder directly.

PROPOSAL NO. 1—ELECTION OF DIRECTORS

In accordance with the Company's restated certificate of incorporation and amended and restated by-laws, the Board of Directors is divided into three classes of approximately equal size. The members of each class are elected to serve a three-year term with the term of office of each class ending in successive years. William Clark, Ronald Cooper and George Siber are the Class III directors whose terms expire at the Annual Meeting. Mr. Clark, Mr. Cooper and Dr. Siber have all been nominated for and have agreed to stand for re-election to the Board of Directors to serve as a Class III director of the Company until the 2023 annual meeting of stockholders and until his successor is duly elected.

It is intended that, unless you give contrary instructions, shares represented by proxies will be voted for the election of the three nominees listed above as director nominees. Genoece has no reason to believe that any nominee will be unable to serve. In the event that one or more nominees is unexpectedly not available to serve, proxies may be voted for another person nominated as a substitute by the Board of Directors, or the Board of Directors may reduce the number of directors to be elected at the Annual Meeting. Information relating to each nominee for election as director and for each continuing director, including his or her period of service as a director of Genoece, principal occupation and other biographical material, is shown below.

**THE BOARD OF DIRECTORS UNANIMOUSLY RECOMMENDS THAT YOU VOTE
FOR
ALL OF THESE NOMINEES FOR CLASS III DIRECTOR
(PROPOSAL 1 ON YOUR PROXY CARD)**

DIRECTOR BIOGRAPHIES

Below sets forth information concerning our directors as of March 1, 2020. The biographical description of each director includes the specific experience, qualifications, attributes and skills that the Board of Directors would expect to consider if it were making a conclusion currently as to whether such person should serve as a director.

CLASS III DIRECTOR NOMINEES

William "Chip" Clark, age 51, is a Class III director who has served on our Board of Directors and as our President and Chief Executive Officer since February 2011. Previously, he served as our Chief Business Officer from August 2010 to February 2011. Mr. Clark has served on our Board of Directors since February 2011. Prior to joining our Company, he served as Chief Business Officer at Vanda Pharmaceuticals, Inc. ("Vanda"), a biopharmaceutical company that he co-founded in 2004. While at Vanda, he led the company's strategic and business development activities, and played a central role in multiple public and private financings. Prior to Vanda, Mr. Clark was a principal at Care Capital, LLC, a venture capital firm investing in biopharmaceutical companies, after serving in a variety of strategic and commercial roles at SmithKline Beecham (now GlaxoSmithKline). Mr. Clark holds a B.A. from Harvard University and an M.B.A. from The Wharton School at the University of Pennsylvania. We believe that Mr. Clark's operational and historical experience with our Company gained from serving as our Chief Executive Officer, President and member of our Board of Directors, combined with his prior experience at Vanda and in the venture capital industry focusing on biopharmaceutical companies, qualifies him to serve as a member of our Board of Directors.

Ronald Cooper, age 57, is a Class III director who has served as a member of our Board of Directors since June 2016. Mr. Cooper is President and CEO of Albireo Pharma ("Albireo"), a position that he was appointed to in June 2015. Mr. Cooper is a life sciences leader with a track record of growing and rejuvenating businesses, brands and organizations in the U.S. and Europe, ranging from entrepreneurial and resource-constrained, up to sales exceeding \$4.5 billion. Prior to Albireo, Mr. Cooper was with Bristol-Myers Squibb ("BMS") for over 25 years working in five different countries and holding positions of increasing responsibility in sales, marketing and general management, culminating in President of Europe. In Europe, Mr. Cooper was responsible for over 30 countries with sales exceeding \$4.5 billion. While at BMS, Mr. Cooper was directly associated with several product successes, including Abilify®, Avapro®, Atripla®, Eliquis®, Orenicia®, Pravachol®, Plavix®, Reyataz®, Sustiva®, Sprycel® and Yervoy®. Mr. Cooper has successfully completed over a dozen business development deals including the creation of the first single tablet HIV/AIDS regimen partnership. Mr. Cooper is a graduate of St. Francis Xavier University in Canada. We believe that Mr. Cooper's experience in the pharmaceutical industry, along with his background as an executive officer of a public company, qualifies him to serve as a member of our Board of Directors.

George Siber, M.D., age 75, is a Class III director who has served as a member of our Board of Directors since 2007. From 1996 to 2007, Dr. Siber served as Executive Vice President and Chief Scientific Officer of Wyeth Vaccines ("Wyeth"). While at Wyeth, Dr. Siber oversaw the development and approval of multiple widely-used childhood vaccines, including: Prevnar, a pneumococcal vaccine which has achieved multibillion dollar revenues; Acel-Imune, an acellular pertussis vaccine; and Meningitec, a meningococcal meningitis vaccine. Prior to Wyeth, Dr. Siber was Director of the Massachusetts Public Health Biologic Laboratories

and a Harvard Medical School Associate Professor of Medicine at Dana Farber Cancer Institute. During this time, Dr. Siber led the research and manufacturing of multiple vaccines and immune globulins including Respigam, a human immune globulin against respiratory syncytial virus. Since 2007, Dr. Siber has served on the boards of directors of several vaccine companies, including Crucell, Selecta Biosciences, Vedantra Pharmaceuticals and Affinivax Inc., and as a consultant or scientific advisory board member of ClearPath Vaccines Company, of which he is currently the Chief Scientific Officer, PaxVax, Vaxess Technologies, Inc., the Bill & Melinda Gates Foundation, PATH, the Wellcome Trust, the European Commission (on vaccinations), the National Institutes of Health, or NIH, and the Korean FDA. Dr. Siber serves as a member of the Board of Trustees of the International Vaccine Institute. Dr. Siber holds an M.D. degree from McGill University in Canada, received post-doctoral training in Internal Medicine at Rush-Presbyterian Hospital in Chicago and Beth Israel Hospital in Boston and Infectious Disease and vaccinology training at Children's Hospital and Beth Israel Hospital, Harvard Medical School Boston. We believe that Dr. Siber's experience in life sciences, vaccine industries and his experience overseeing the development of multiple vaccines qualifies him to serve as a member of our Board of Directors.

DIRECTORS NOT STANDING FOR ELECTION AT THE ANNUAL MEETING

Kenneth Bate, age 69, is a Class I director who has served as a member of our Board of Directors since September 2014 and our chair since December 2018. Mr. Bate has served as an independent consultant in the biotechnology field since 2012. From 2009 to 2012, Mr. Bate served as President and Chief Executive Officer of Archemix, Inc., a privately-held biotechnology company. From 2006 to 2009, Mr. Bate served in various positions at NitroMed, Inc., a pharmaceutical company, most recently as President and Chief Executive Officer. From 2002 to 2005, Mr. Bate served as Chief Financial Officer of Millennium Pharmaceuticals Inc., where he headed the commercial organization. Prior to joining Millennium Pharmaceuticals Inc., Mr. Bate co-founded JSB Partners, LLC, a banking and advisory services firm for biopharmaceutical and life sciences companies. From 1990 to 1996, he was with Biogen Inc., a biotechnology company, first as their Chief Financial Officer, and then as head of the commercial organization responsible for launching the multiple sclerosis business. Mr. Bate is currently a director of AVEO Pharmaceuticals, Catabasis Pharmaceuticals, Epizyme Inc., and Madrigal Pharmaceuticals. He holds a B.A. from Williams College and an M.B.A. from The Wharton School of the University of Pennsylvania. We believe that Mr. Bate's experience as a chief executive officer of multiple biotechnology companies, as well as his experience as a director of other companies, qualifies him to serve as a member of our Board of Directors.

Ali Behbahani, M.D., age 43, is a Class I director who has served as a member of our Board of Directors since February 2018. Since 2007, Dr. Behbahani has served in various positions on the healthcare team at New England Associates, most recently as General Partner. The healthcare team specializes in investments in the biopharmaceutical and medical device sectors. He is also currently a member of the board of directors of CRISPR Therapeutics, Adaptimmune and Nevro Corp. He has previously worked as a consultant in business development at The Medicines Company and held positions as a Venture Associate at Morgan Stanley Venture Partners from 2000 to 2002 and as a Healthcare Investment Banking Analyst at Lehman Brothers from 1998 to 2000. Dr. Behbahani conducted basic science research in the fields of viral fusion inhibition and structural proteomics at the National Institutes of Health and at Duke University. He holds an M.D. degree from The University of Pennsylvania School of Medicine and an M.B.A. from The University of Pennsylvania Wharton School. We believe Dr. Behbahani's experience in the biopharmaceutical industry, as well as his experience as a member on the boards of directors of multiple companies in the industry, qualifies him to serve as a member of our Board of Directors.

Katrine Bosley, age 51, is a Class II director who has served as a member of our Board of Directors since March 2013 and as our chair from August 2013 until December 2018. Ms. Bosley served as the Chief Executive Officer of Editas Medicine Inc. ("Editas") from June 2014 through February 2019. Prior to Editas, Ms. Bosley was the Entrepreneur-in-Residence at The Broad Institute from September 2013 to May 2014. She served as Chief Executive Officer of Avila Therapeutics Inc. ("Avila"), from May 2009 to March 2012, when Avila was acquired by Celgene Corporation. Before Avila, she was Vice President, Strategic Operations at Adnexus Therapeutics Inc. ("Adnexus"), a BMS Company, and was Vice President, Business Development at Adnexus before that. She joined Adnexus from Biogen Idec where she held roles in business development, commercial operations, and portfolio strategy in the United States and Europe. In addition to serving as a director of our Company, Ms. Bosley currently serves as a director of Galapagos NV and Massachusetts Eye and Ear. She also is a member of the BIO Governing Board and Chair of the Emerging Companies Section of the Board. Ms. Bosley graduated from Cornell University with a B.A. in Biology. We believe that Ms. Bosley's experience as a chief executive officer of a biotechnology company and her breadth of experience in creating strategic and business development value qualifies her to serve as a member of our Board of Directors.

Michael Higgins, age 57, is a Class II director who has served as a member of our Board of Directors since February 2015. In January 2015, Mr. Higgins joined Polaris Partners as an Entrepreneur-in-Residence. Prior to joining Polaris Partners, Mr. Higgins served as Chief Operating Officer and Chief Financial Officer at Ironwood Pharmaceuticals ("Ironwood") from 2003 through 2014, playing a key role in Ironwood's evolution from a privately-funded discovery organization through its initial public offering and the launch of its first commercial product. Under his leadership, Ironwood was able to raise more than one billion

dollars to help support the development of the business during that period. Prior to his work at Ironwood, from 1997 through 2003, Mr. Higgins worked at Genzyme Corporation ("Genzyme") in a variety of leadership roles including Vice President, Corporate Finance and Vice President, Business Development. While at Genzyme, he was involved with multiple businesses including the Cell Therapy, Gene Therapy, and Orphan Disease business units. Previously, Mr. Higgins served as Chief Financial Officer of Procept, Inc., from 1992 to 1997, and led the company through its initial public offering. Mr. Higgins currently serves as a director of Pulmatrix, Inc. and Voyager Therapeutics. Mr. Higgins began his pharmaceutical career as a sales representative for Schering-Plough Corporation in 1986. Mr. Higgins earned his B.S. from Cornell University and holds an M.B.A. from the Amos Tuck School of Business at Dartmouth College. We believe that Mr. Higgins' financial and business expertise, including his diversified background as an executive officer in public pharmaceutical companies, qualifies him to serve as a member of our Board of Directors.

Howard Mayer, M.D., age 57, is a Class I director who has served as a member of our Board of Directors since March 2017. Dr. Mayer is Executive Vice President, Head of R&D at Ipsen since December 2019. Previous to that, Dr. Mayer was Senior Vice President and Chief Medical Officer at Shire Plc ("Shire"). Dr. Mayer joined Shire in 2012 and was responsible for global clinical development across hematology, immunology, oncology, genetic diseases, GI/metabolic, neuroscience and ophthalmology therapeutic areas. From 2009 to 2012 he served as Chief Medical Officer at EMD Serono, a division of Merck KGaA. Prior to that, he held a variety of global roles at Pfizer Inc. ("Pfizer"), including Head of Clinical Development and Medical Affairs for Virology/Infectious Diseases. Prior to joining Pfizer, he served as Director of Infectious Diseases Clinical Research at BMS for five years. Dr. Mayer obtained his B.A. from the University of Pennsylvania and his M.D. from Albert Einstein College of Medicine in New York, which was followed by an internship and residency at Mount Sinai Hospital and an Infectious Diseases fellowship at Harvard Medical School. Since 2011 he has served on the board of Autism Speaks in New England. In 2011 and 2017, he was honored by PharmaVoice as one of the 100 Most Inspiring People in the Life Sciences Industry. We believe that Dr. Mayer's scientific expertise, which includes clinical development experiences in both infectious disease and oncology, qualifies him to serve as a member of our Board of Directors.

Gisela Schwab, M.D., age 63, is a Class II director who was appointed to serve as a member of our Board of Directors in February 2020. Dr. Schwab has served as President, Product Development and Medical Affairs and Chief Medical Officer of Exelixis, Inc. ("Exelixis") since February 2016. Previously, she served as Executive Vice President and Chief Medical Officer of Exelixis from January 2008 to February 2016 and as Senior Vice President and Chief Medical Officer of Exelixis from September 2006 to January 2008. From 2002 to 2006, she held the position of Senior Vice President and Chief Medical Officer at Abgenix, Inc. ("Abgenix"), a human antibody-based drug development company. She also served as Vice President, Clinical Development, at Abgenix from 1999 to 2001. Prior to working at Abgenix, from 1992 to 1999, she held positions of increasing responsibility at Amgen Inc., most recently as Director of Clinical Research and Hematology/Oncology Therapeutic Area Team Leader. From August 2011 through July 2014, Dr. Schwab served as a member of the board of directors of Topotarget A/S, a publicly-held biopharmaceutical company. Since June 2012 she has served as a member of the board of directors of Cellerant Therapeutics, Inc. a privately-held biopharmaceutical company and since March 2015, she has served as a member of the board of directors of Nordic Nanovector A.S., a Norwegian biotechnology company. She received her Doctor of Medicine degree from the University of Heidelberg, trained at the University of Erlangen-Nuremberg and the National Cancer Institute and is board certified in internal medicine and hematology and oncology. We believe that Dr. Schwab's scientific expertise, which includes advancing product candidates through development and regulatory approval to commercial launch, qualifies her to serve as a member of our Board of Directors.

BOARD OF DIRECTORS AND ITS COMMITTEES

The following table describes which directors serve on each of the committees of the Board of Directors as of March 1, 2020.

	Audit Committee	Compensation Committee	Nominating and Governance Committee
Kenneth Bate, Chair ★	✎	✎	
Ali Behbahani, M.D.		✎	
Katrine Bosley			✎
Ron Cooper	✎		✎
Michael Higgins	✎		
Howard Mayer, M.D.		✎	
George Siber, M.D.			✎

✎ = Chairperson ✎ = Member ★ = Chairman of the Board

THE BOARD OF DIRECTORS AND ITS COMMITTEES

Director Independence

As required by the listing standards of The Nasdaq Capital Market ("Nasdaq"), the Board of Directors has affirmatively determined, upon the recommendation of the Nominating and Corporate Governance Committee, that each of our directors (other than William Clark, our President and Chief Executive Officer) is independent. To make this determination, our Board of Directors reviews all relevant transactions or relationships between each director and Genoea, its senior management and its independent registered public accounting firm. During this review, the Board of Directors considers whether there are any transactions or relationships between directors or any member of their immediate family (or any entity of which a director or an immediate family member is an executive officer, general partner or significant equity holder) and members of our senior management or their affiliates. The Board of Directors consults with Genoea's outside corporate counsel to ensure that the Board of Directors' determinations are consistent with all relevant securities and other laws and regulations regarding the definition of "independent," including those set forth in pertinent Nasdaq listing standards, as in effect from time to time.

Board Meetings and Attendance

The Board of Directors held nine meetings during the year ended December 31, 2019. Each of the directors attended at least 75% of the meetings of the Board of Directors and the committees of the Board of Directors on which he or she served during the year ended December 31, 2019 (in each case, which were held during the period for which he or she was a director and/or a member of the applicable committee). Each director who is up for election at an annual meeting of stockholders or who has a term that continues after such annual meeting is expected to attend the Annual Meeting. All but one of our then existing directors on the Board of Directors attended our 2019 annual meeting.

Board Committees

The Board of Directors has standing Audit, Compensation and Nominating and Corporate Governance Committees, each of which is comprised solely of independent directors, and is described more fully below. The charters for the Audit, Compensation and Nominating and Corporate Governance Committees are all available on our website (<http://ir.genoea.com/>) under "Investors" at "Governance".

Audit Committee

Our Audit Committee is composed of Mr. Bate, Mr. Cooper, and Mr. Higgins, with Mr. Higgins serving as chair of the committee. Our Board of Directors has determined, upon the recommendation of the Nominating and Corporate Governance Committee, that each member of the Audit Committee meets the independence requirements of Rule 10A-3 under the Exchange Act of 1934, as amended (the "Exchange Act") and the applicable listing standards of Nasdaq. Our Board of Directors has determined that each of Mr. Bate, Mr. Cooper, and Mr. Higgins is an "audit committee financial expert" within the meaning of the SEC regulations and applicable listing standards of Nasdaq. Our Audit Committee operates pursuant to a written charter and it reviews and assesses the adequacy of its charter annually.

The Audit Committee's responsibilities include:

- appointing, approving the compensation of, and assessing the qualifications, performance and independence of our independent registered public accounting firm by considering (i) evaluations of our independent registered public accounting firm by our management and internal auditors, (ii) our independent registered public accounting firm's effectiveness of communications and working with the Audit Committee and our management and internal auditors, (iii) the length of time our independent registered public accounting firm has served as our independent auditors, (iv) the quality and depth of our independent registered public accounting firm's expertise and experience in the biotech and life sciences industries in light of the breadth, complexity and global reach of our business and (v) the advisability and potential impact of selecting a different independent registered public accounting firm;
- pre-approving audit and permissible non-audit services, and the terms of such services, to be provided by our independent registered public accounting firm;
- reviewing the internal audit plan with the independent registered public accounting firm and members of management responsible for preparing our financial statements;

- reviewing and discussing with management and the independent registered public accounting firm our annual and quarterly financial statements and related disclosures as well as critical accounting policies and practices used by us;
- reviewing the adequacy of our internal control over financial reporting;
- establishing policies and procedures for the receipt and retention of accounting-related complaints and concerns;
- recommending, based upon the Audit Committee's review and discussions with management and the Company's independent registered public accounting firm, whether our audited financial statements shall be included in our Annual Report;
- monitoring our compliance with legal and regulatory requirements as they relate to our financial statements and accounting matters;
- preparing the Audit Committee report required by the rules of the SEC to be included in our annual proxy statement;
- viewing all related party transactions for potential conflict of interest situations and approving all such transactions; and
- reviewing and discussing with management and our independent registered public accounting firm our earnings releases and scripts.

All audit and non-audit services to be provided to us by our independent registered public accounting firm must be approved in advance by the Audit Committee. During the year ended December 31, 2019, the Audit Committee met four times. The report of the Audit Committee is included in this Proxy Statement under "Audit Committee Report".

Compensation Committee

Our Compensation Committee is composed of Mr. Bate, Dr. Behbahani, and Dr. Mayer, with Mr. Bate serving as chair of the committee. The Board of Directors has determined, upon the recommendation of the Nominating and Corporate Governance Committee, that each member of the Compensation Committee is "independent" within the meaning of the rules and regulations of Nasdaq and the SEC. In addition, each member is a "non-employee director" within the meaning of the SEC rules. Our Compensation Committee operates pursuant to a written charter and it reviews and assesses the adequacy of its charter periodically.

The Compensation Committee's responsibilities include:

- annually reviewing and recommending to the Board of Directors for approval the corporate goals and objectives relevant to the compensation of our Chief Executive Officer;
- evaluating the performance of our Chief Executive Officer in light of such corporate goals and objectives and recommending to the Board of Directors for approval the compensation of our Chief Executive Officer;
- reviewing and approving the compensation of our other executive officers;
- appointing, compensating and overseeing the work of any compensation consultant, legal counsel or other advisor retained by the Compensation Committee;
- conducting the independence assessment outlined in Nasdaq rules with respect to any compensation consultant, legal counsel or other advisor retained by the Compensation Committee;
- annually reviewing and reassessing the adequacy of the committee charter in accordance with the listing requirements of Nasdaq;
- reviewing and establishing our overall management compensation philosophy and policy;
- overseeing and administering our equity compensation and other incentive compensation programs;
- reviewing and approving our equity and incentive policies and procedures for the grant of equity-based awards and approving the grant of such equity-based awards;
- reviewing and making recommendations to the Board of Directors with respect to director compensation; and

- if applicable, producing the compensation committee report to be included in our annual proxy statement and/or Annual Report.

During the year ended December 31, 2019, the Compensation Committee met three times.

Nominating and Corporate Governance Committee

Our Nominating and Corporate Governance Committee is composed of Ms. Bosley, Mr. Cooper, and Dr. Siber, with Ms. Bosley serving as chair of the committee. Our Board of Directors has determined that each member of the Nominating and Corporate Governance Committee is "independent" within the meaning of the rules and regulations of Nasdaq. Our Nominating and Corporate Governance Committee operates pursuant to a written charter and it reviews and assesses the adequacy of its charter periodically.

The Nominating and Corporate Governance Committee's responsibilities include:

- developing and recommending to the Board of Directors criteria for board and committee membership;
- establishing procedures for identifying and evaluating Board of Director candidates, including nominees recommended by stockholders;
- identifying individuals qualified to become members of the Board of Directors;
- recommending to the Board of Directors the persons to be nominated for election as directors and to each of the Board of Directors' committees;
- developing and recommending to the Board of Directors a set of corporate governance principles;
- articulating to each director what is expected, including reference to the corporate governance principles and directors' duties and responsibilities;
- reviewing and recommending to the Board of Directors practices and policies with respect to directors;
- reviewing and recommending to the Board of Directors the functions, duties and compositions of the committees of the Board of Directors;
- reviewing and assessing the adequacy of the committee charter and submitting any changes to the Board of Directors for approval;
- considering and reporting to the Board of Directors any questions of possible conflicts of interest of Board of Directors members;
- providing for new director orientation and continuing education for existing directors on a periodic basis;
- performing an evaluation of the performance of the committee; and
- overseeing the evaluation of the Board of Directors and management.

The Nominating and Corporate Governance Committee does not set specific, minimum qualifications that nominees must meet in order to be recommended to the Board of Directors, but rather believes that each nominee should be evaluated based on his or her individual merits, taking into account the needs of Genocsa and the composition of the Board of Directors. Additionally, neither the Nominating and Corporate Governance Committee nor the Board of Directors has a specific policy with regard to the consideration of diversity in identifying director nominees; however, both may consider the diversity of background and experience of a director nominee in the context of the overall composition of the Board of Directors at that time, such as diversity of knowledge, skills, experience, geographic location, age, gender, and ethnicity. Members of the Nominating and Corporate Governance Committee discuss and evaluate possible candidates in detail and suggest individuals to explore in more depth.

The Nominating and Corporate Governance Committee will consider candidates recommended by stockholders. Candidates recommended by stockholders are given appropriate consideration in the same manner as other candidates.

During the year ended December 31, 2019, the Nominating and Corporate Governance Committee met five times.

Board of Directors Leadership Structure

Mr. Bate has served as the chair of our Board of Directors since December 2018. The independent members of the Board of Directors have periodically reviewed the Board of Directors' leadership structure and have determined that Genocera and our stockholders are well served with this structure.

The chair of the Board of Directors provides leadership to the Board of Directors and works with the Board of Directors to define its activities and the calendar for fulfillment of its responsibilities. The chair of the Board of Directors approves the meeting agendas after input from the Board of Directors and management, facilitates communication among directors and presides at meetings of our Board of Directors and stockholders.

The Board of Directors' Role in Risk Oversight

The Board of Directors plays an important role in risk oversight through direct decision-making authority with respect to significant matters as well as through the oversight of management by the Board of Directors and its committees. In particular, the Board of Directors administers its risk oversight function through (1) the review and discussion of regular periodic reports by the Board of Directors and its committees on topics relating to the risks that we face, (2) the required approval by the Board of Directors (or a committee of the Board of Directors) of significant transactions and other decisions, (3) the direct oversight of specific areas of our business by the Audit, Compensation and Nominating and Corporate Governance Committees, and (4) regular periodic reports from our independent registered public accounting firm and other outside consultants regarding various areas of potential risk, including, among others, those relating to our internal control over financial reporting and executive compensation. The Board of Directors also relies on management to bring significant matters impacting our Company to the attention of the Board of Directors.

Pursuant to the Audit Committee's charter, the Audit Committee is responsible for reviewing and discussing with management and the independent registered public accounting firm our system of internal controls, our critical accounting practices, and policies relating to risk assessment and management. As part of this process, the Audit Committee discusses our major financial risk exposures and steps that management has taken to monitor and control such exposure. In addition, the Audit Committee has established procedures for the receipt, retention and treatment of complaints received by the Company regarding accounting, internal accounting controls or auditing matters, and the confidential, anonymous submissions by employees of concerns regarding questionable accounting or accounting matters.

Because of the role of the Board of Directors and the Audit Committee in risk oversight, the Board of Directors believes that any leadership structure that it adopts must allow it to effectively oversee the management of the risks relating to our operations. The Board of Directors acknowledges that there are different leadership structures that could allow it to effectively oversee the management of the risks relating to the Company's operations and believes its current leadership structure enables it to effectively provide oversight with respect to such risks.

Compensation Consultant

As a part of determining compensation for our named executive officers, the Compensation Committee engaged Pay Governance LLC ("Pay Governance") as its independent compensation consultant for 2019. As its independent compensation consultant, Pay Governance provided analysis and recommendations to the Compensation Committee regarding:

- trends with respect to executive and director compensation;
- the development of a peer group used for compensation-related purposes;
- forms and levels of compensation for executive officers and directors;
- stock utilization and related metrics;
- employment and separation agreements with our executive officers; and
- the risk profile of our compensation programs.

When requested, consultants from Pay Governance attended meetings of the Compensation Committee, including executive sessions in which executive compensation matters were discussed. During 2019, Pay Governance reported to the Compensation Committee and not to management, although Pay Governance met with management for purposes of gathering information for its analyses and recommendations.

Although the Board of Directors and the Compensation Committee considers the advice and recommendations of Pay Governance (or any other compensation consultant it might engage in the future) as related to our executive compensation program, the Board of Directors and the Compensation Committee ultimately make their own decisions about the compensation arrangements for our executive officers.

In determining whether to engage Pay Governance, the Compensation Committee considered the independence of Pay Governance, taking into consideration relevant factors, including the absence of other services provided to the Company by Pay Governance, the amount of fees the Company paid to Pay Governance as a percentage of Pay Governance's total revenues, the policies and procedures of Pay Governance that are designed to prevent conflicts of interest, any business or personal relationship of the individual compensation advisors employed by Pay Governance with any executive officer of the Company, any business or personal relationship of the individual compensation advisors employed by Pay Governance with any member of the Compensation Committee, and any stock of the Company owned by Pay Governance or the individual compensation advisors employed by Pay Governance (the "Independence Factors"). The Compensation Committee has determined, based on its analysis in light of all relevant factors, including the Independence Factors listed above, that the work of Pay Governance and the individual compensation advisors employed by Pay Governance as compensation consultants to the Compensation Committee did not create any conflicts of interest, and that Pay Governance was independent under the independence standards set forth in the Nasdaq listing standards promulgated pursuant to Section 10C of the Exchange Act.

Non-Employee Director Compensation Policy

Our Board of Directors adopted a non-employee director compensation policy that is designed to enable us to attract and retain, on a long-term basis, highly-qualified non-employee directors. Under the policy, as it may be amended from time to time, all non-employee directors will be paid cash compensation as set forth in the table below. Cash fees are prorated for partial years of service. In addition, we reimburse our non-employee directors for reasonable travel expenses in connection with their service.

	Annual Cash Fees	
Board of Directors:		
All non-employee members	\$	35,000
Additional retainer for chair	\$	40,000
Audit Committee:		
Members	\$	7,500
Additional retainer for chair	\$	7,500
Compensation Committee:		
Members	\$	5,000
Additional retainer for chair	\$	5,000
Nominating and Corporate Governance Committee:		
Members	\$	3,500
Additional retainer for chair	\$	3,500

Under our non-employee director compensation policy, each non-employee director who is initially appointed or elected to our Board of Directors is eligible to be granted options to purchase 9,375 shares of our common stock under the Genocera Biosciences Inc. Amended and Restated 2014 Equity Incentive Plan ("2014 Equity Plan") at the time of his or her initial appointment or election to our Board of Directors. These options vest annually in equal installments over a three-year period, generally subject to the non-employee director's continued service. In addition, each continuing non-employee director is eligible to be granted options to purchase 5,625 shares of our common stock under our 2014 Equity Plan on an annual basis, which vest in full on the first anniversary of the grant date, generally subject to the non-employee director's continued service through such date. These annual option grants are made on the date of the Company's annual meeting of stockholders for the relevant year or as soon thereafter as is reasonably practicable.

We did not make any changes to our non-employee director compensation policy for 2019, except the number of shares of our common stock subject to option grants was proportionately adjusted to reflect our eight-to-one reverse stock split in May 2019.

Director Agreements

Dr. Siber

The Company was previously party to a consulting agreement with Dr. Siber that provided for a monthly consulting fee of \$9,833 per month for consulting services performed by Dr. Siber related to strategic scientific and business development.

The term of the consulting agreement expired on July 17, 2019. Under the consulting agreement, Dr. Siber agreed not to solicit our employees, contractors and customers for a period of 12 months following the termination of the consulting agreement and is subject to covenants relating to the use and disclosure of confidential information and the assignment of inventions.

Director Compensation

The following table sets forth information concerning the compensation earned by our non-employee directors during 2019. All of our non-employee directors were compensated for service on our Board of Directors under our non-employee director compensation policy. Dr. Siber received additional compensation under his consulting agreement, as described above, prior to its expiration. Mr. Clark receives no additional compensation for his service as a director, and, consequently, is not included in this table. The compensation received by Mr. Clark as our President and Chief Executive Officer for 2019 is set forth in the “Summary Compensation Table” under the section “Executive Compensation”.

Name	Fees earned or paid in cash (\$)(1)	Option awards \$(2)(3)	Total (\$)
Kenneth Bate	92,500	20,588	113,088
Ali Behbahani, M.D. (4)	42,637	20,588	63,225
Katrine Bosley	42,000	20,588	62,588
Ronald Cooper	46,000	20,588	66,588
Michael Higgins	50,000	20,588	70,588
Howard Mayer, M.D.	40,000	20,588	60,588
George Siber, M.D. (4)	109,179	20,588	129,767

- (1) Amounts represent annual director fees and, in the case of Dr. Siber, include consulting fees, for services rendered, as described above. Consulting fees paid to Dr. Siber were paid in equal monthly installments through July 2019, totaling \$68,333. All other director fees were paid quarterly in arrears.
- (2) As of December 31, 2019, our directors held the following aggregate number of options to purchase shares of our common stock: Mr. Bate held options to purchase 16,892 shares of our common stock, Dr. Behbahani held options to purchase 15,000 shares of our common stock, Ms. Bosley held options to purchase 20,252 shares of our common stock, Mr. Cooper held options to purchase 16,250 shares of our common stock, Mr. Higgins held options to purchase 16,261 shares of our common stock, Dr. Mayer held options to purchase 14,375 shares of our common stock, and Dr. Siber held options to purchase 25,676 shares of our common stock.
- (3) Amounts in the table represent the aggregate grant date fair value of options to purchase shares of our common stock granted during 2019. All of our non-employee directors were granted options to purchase 5,625 shares of our common stock in 2019, which options will vest in full on the one-year anniversary of their respective date of grant, generally subject to the non-employee director's continued service. These grant date fair value amounts were computed in accordance with Financial Accounting Standards Board Accounting Standards Codification Topic 718, Compensation — Stock Compensation (“ASC 718”), excluding the effect of estimated forfeitures. Assumptions used in the calculation of these amounts are included in Note 10 to our financial statements included in our Annual Report.
- (4) In addition to annual director fees paid with respect to 2019 services, amounts include payments related to director services rendered in 2018 for which payment was not made until 2019.

AUDIT COMMITTEE REPORT

The Audit Committee reviewed the Genocera audited financial statements for the year ended December 31, 2019 and discussed these statements with management and Ernst & Young LLP, the Company's independent registered public accounting firm. Genocera management is responsible for the preparation of the Company's financial statements and for maintaining an adequate system of disclosure controls and procedures and internal control over financial reporting for that purpose. Ernst & Young LLP is responsible for expressing an opinion on the conformity of the audited financial statements with generally accepted accounting principles, discussing their judgments as to the quality, not just the acceptability, of the Company's accounting principles and such other matters as are required to be discussed with the Audit Committee under generally accepted auditing standards. The Audit Committee is responsible for providing independent, objective oversight of the Company's accounting functions and internal controls.

The Audit Committee also received from, and discussed with, Ernst & Young LLP all communications required under the standards of the Public Company Accounting Oversight Board (the "PCAOB"), including the matters required to be discussed by Ernst & Young LLP with the Audit Committee, including the matters to be discussed by the PCAOB and the SEC.

Ernst & Young LLP also provided the Audit Committee with the written disclosures and the letter required under the PCAOB, which requires that independent registered public accounting firms annually disclose in writing all relationships that in their professional opinion may reasonably be thought to bear on independence, to confirm their perceived independence and engage in a discussion of independence. The Audit Committee reviewed this disclosure and discussed with Ernst & Young LLP their independence from Genoccea.

Based on its discussions with management and our independent registered public accounting firm, and its review of the representations and information provided by management and our independent registered public accounting firm, the Audit Committee recommended to the Board of Directors that the audited financial statements be included in the Genoccea Annual Report on Form 10-K for the year ended December 31, 2019, for filing with the SEC.

Respectfully submitted by the

Audit Committee,

Michael Higgins, Chair
Kenneth Bate
Ronald Cooper

PROPOSAL NO. 2—TO APPROVE AN AMENDMENT TO OUR RESTATED CERTIFICATE OF INCORPORATION TO PROVIDE FOR AN INCREASE IN THE TOTAL NUMBER OF SHARES OF COMMON STOCK THAT THE COMPANY IS AUTHORIZED TO ISSUE FROM 85,000,000 SHARES TO 170,000,000 SHARES

General

Stockholders are being asked to approve an amendment to our restated certificate of incorporation, in the form attached hereto as Appendix A (the "Charter Amendment"). The Charter Amendment increases the number of authorized shares of common stock from eighty-five million (85,000,000) shares to one hundred and seventy million (170,000,000) shares. On April 2, 2020, the Board of Directors approved the Charter Amendment, subject to stockholder approval, and directed that the Charter Amendment be submitted to a vote of the Company's stockholders at this Annual Meeting. The Board of Directors has determined that the Charter Amendment is in the best interests of the Company and its stockholders and recommends approval by the stockholders.

The current restated certificate of incorporation, as amended (the "Current Charter") authorizes the issuance of up to 85,000,000 shares of common stock, par value of \$0.001 per share. As of the close of business on March 31, 2020, 27,643,773 shares of common stock were outstanding. In addition, as of the close of business on March 31, 2020, the Company had 1,289,995 shares of common stock subject to outstanding awards granted under our 2014 Equity Plan, 1,251,700 shares of common stock reserved for issuance under our 2014 Equity Plan (determined without giving effect to the increase in shares contemplated by Proposal No. 3 below and without giving effect to the plan's evergreen provision), 100,032 shares of common stock subject to outstanding stock options granted under the Company's Amended and Restated 2007 Equity Incentive Plan ("2007 Equity Plan"), 217,966 shares of common stock reserved for issuance under the Company's 2014 Employee Stock Purchase Plan ("2014 ESPP"), 25,000 shares of common stock subject to outstanding stock options granted as inducement awards, 5,122,183 shares reserved for issuance upon the exercise of outstanding warrants (with a weighted average exercise price of \$7.66 as of March 31, 2020), and 204,375 shares reserved for issuance upon conversion of Series A preferred stock. This means that as of March 31, 2020, the Company had just 1,251,635 shares of common stock available for corporate purposes, including, among other things, the issuance of stock options and stock splits by way of dividend. The Current Charter also authorizes the issuance of 25,000,000 shares of preferred stock, with only 1,635 shares of preferred stock issued and outstanding as of March 31, 2020. The Charter Amendment will not increase or otherwise affect the Company's authorized preferred stock or otherwise affect any other provisions of the Current Charter.

Purpose of the Charter Amendment

The Board of Directors believes it is in the best interest of the Company to increase the number of authorized shares of common stock in order to give the Company greater flexibility in considering and planning for future potential business needs.

With the exception of the Company's routine practice of granting stock options to employees and directors, the Company has no current specific plan, commitment, arrangement, understanding, or agreement regarding the issuance of the additional shares of common stock resulting from the proposed increase in authorized shares. The additional shares of common stock will be available for issuance by the Board of Directors for various corporate purposes, including but not limited to, grants under employee stock plans, financings, potential strategic transactions, including mergers, acquisitions, strategic partnerships, joint ventures, divestitures, business combinations, stock splits, stock dividends, as well as other general corporate transactions.

Having this additional authorized common stock available for future use will allow the Company to issue additional shares of common stock without the expense and delay of arranging a special meeting of stockholders.

Possible Effects of the Charter Amendment and Additional Anti-takeover Consideration

If the Charter Amendment is approved, the additional authorized shares would be available for issuance at the discretion of the Board of Directors and without further stockholder approval, except as may be required by law or the rules of Nasdaq. The additional shares of authorized common stock would have the same rights and privileges as the shares of common stock currently issued and outstanding. The adoption of the Charter Amendment would not have any immediate dilutive effect on the proportionate voting power or other rights of existing stockholders. Shares of common stock issued otherwise than for a stock split may decrease existing stockholders' percentage equity ownership and, depending on the price at which they are issued, could be dilutive to the voting rights of existing stockholders and have a negative effect on the market price of the common stock. The common stock carries no preemptive rights to purchase additional shares of common stock.

The Company cannot provide assurances that any such transactions will be consummated on favorable terms or at all, that they will enhance stockholder value or that they will not adversely affect the Company's business or the trading price of our stock.

The Company has not proposed the increase in the number of authorized shares of common stock with the intention of using the additional authorized shares for anti-takeover purposes, but the Company would be able to use the additional shares to oppose a hostile takeover attempt or delay or prevent changes in control or management of the Company. For example, without further stockholder approval, the Board of Directors could sell shares of common stock in a private transaction to purchasers who would oppose a takeover or favor the current Board of Directors. Although this proposal to increase the authorized number of shares of common stock has been prompted by business and financial considerations and not by the threat of any known or threatened hostile takeover attempt, stockholders should be aware that approval of this proposal could facilitate future efforts by the Company to oppose changes in control of the Company and perpetuate the Company's management, including transactions in which the stockholders might otherwise receive a premium for their shares over then current market prices.

If the Company's stockholders approve the Charter Amendment, the Board of directors will have authority to file with the Secretary of State of Delaware the Charter Amendment. The Charter Amendment will become effective on the date it is filed. The Board of Directors reserves the right to abandon or delay the filing of the Charter Amendment even if it is approved by our stockholders. The Charter Amendment is attached to this proxy statement as Appendix A.

Neither Delaware law, the Current Charter, nor the Company's amended and restated by-laws provides for appraisal or other similar rights for dissenting stockholders in connection with this proposal. Accordingly, the Company's stockholders will have no right to dissent and obtain payment for their shares.

The affirmative vote of a majority of the outstanding shares of common stock is required to approve the Amended Charter. Accordingly, abstentions and broker non-votes will have the effect of a negative vote.

**THE BOARD OF DIRECTORS UNANIMOUSLY RECOMMENDS THAT YOU VOTE
FOR**

**THE APPROVAL OF THE AMENDMENT TO OUR RESTATED CERTIFICATE OF INCORPORATION TO PROVIDE FOR AN INCREASE
IN THE TOTAL NUMBER OF SHARES OF COMMON STOCK THAT THE COMPANY IS AUTHORIZED TO ISSUE FROM 85,000,000
SHARES TO 170,000,000 SHARES**

(PROPOSAL 2 ON YOUR PROXY CARD)

PROPOSAL NO. 3—TO APPROVE AN AMENDMENT TO THE GENOCEA BIOSCIENCES, INC. AMENDED AND RESTATED 2014 EQUITY INCENTIVE PLAN TO INCREASE THE NUMBER OF SHARES RESERVED FOR ISSUANCE BY 2,800,000 SHARES, TO INCREASE THE INDIVIDUAL NON-EMPLOYEE DIRECTOR SHARE LIMIT AND TO REMOVE THE INDIVIDUAL OTHER PARTICIPANT LIMITS CONTAINED IN THIS PLAN

Our 2014 Equity Plan was originally approved by our Board of Directors and our stockholders prior to the effectiveness of our IPO in 2014 and was subsequently amended and restated in 2018. Our Board of Directors is asking our stockholders to approve an amendment to our 2014 Equity Plan to (i) increase by 2,800,000 shares the number of shares of our common stock reserved for issuance thereunder, (ii) increase the maximum number of shares of our common stock subject to awards that may be granted to our non-employee directors in any calendar year (subject to an aggregate dollar cap that has not been amended) and (iii) eliminate the limits on the maximum number of shares of our common stock subject to awards that may be granted to our employees in any calendar year. Other than these proposed changes, the amendment does not make any other changes to our 2014 Equity Plan.

Our Board of Directors approved the amendment to our 2014 Equity Plan, subject to stockholder approval, to replenish the shares available to us for the grant of equity awards. We have historically granted equity awards to our employees, including our executive officers, almost exclusively in the form of stock options. Nearly all of our outstanding stock options are significantly underwater, with a weighted average exercise price of \$11.28 per share. The closing price of our common stock on the Nasdaq was \$1.72 per share on March 31, 2020. As a result, our Board of Directors believes that our currently outstanding equity awards are not an effective tool to retain and motivate our employees, including our executive officers, and, with the significant decrease in our stock price since the share pool was determined, the shares remaining available for issuance are not sufficient to permit us to deliver the value necessary to do so. Our Board of Directors believes that the effective use of long-term equity compensation is vital to our ability to achieve strong performance in the future and that our continued success depends, in large part, on our ability to attract, retain and motivate key employees with relevant experience and critical skills in the highly-competitive market for employee talent in which we operate. Further, the use of long-term equity compensation allows us to preserve our cash resources, which is especially important in light of the challenging global economic conditions and uncertainty that we and other companies are currently facing.

For the reasons stated above, our Board of Directors has determined that it is in the best interests of the Company and its stockholders to approve this proposal. Our Board of Directors has approved the amendment to our 2014 Equity Plan, subject to stockholder approval, and recommends that stockholders vote in favor of this proposal at the Annual Meeting. Stockholder approval of this proposal requires the affirmative vote of a majority of the outstanding shares of common stock that are present in person or by proxy and entitled to vote on the proposal at the Annual Meeting.

If stockholders approve this proposal, the amendment to our 2014 Equity Plan will become effective as of the date of stockholder approval. If stockholders do not approve this proposal, the amendment to our 2014 Equity Plan will not become effective and our 2014 Equity Plan will continue to be administered in its current form. In addition, if stockholders do not approve this proposal, certain awards that were granted contingent upon obtaining stockholder approval of this proposal, as described in more detail under "New Plan Benefits" below, will be automatically forfeited.

Reasons for Voting for the Proposal

Long-Term Equity is a Key Component of our Compensation Programs

- Delivering competitive equity compensation to our management team and our other key employees is essential to attracting and retaining the quality of talent required for us to achieve our operating and strategic objectives. We compete for this talent with a significant number of biotechnology, pharmaceutical and other life sciences companies in Massachusetts that offer generous equity compensation programs. Attracting and retaining key talent is very much in the interest of our stockholders.
- Equity awards incentivize our employees to manage our business as owners, aligning their interests with those of our stockholders. Equity awards, the value of which depends on our stock performance and which generally require continued service over time before any value can be realized, help achieve these objectives and are a key element of our compensation programs.
- Equity awards allow us to provide market competitive compensation while preserving our cash resources. We believe that, for investors, a combination of equity and cash compensation optimizes the Company's valuation and properly incentivizes executives and key employees by linking their pay to Company performance.

Additional Shares are Required for Future Grants and Retention of Key Employees

- If we do not obtain approval to increase the available pool, it will negatively impact our ability to attract and retain quality talent, reward performance and provide market competitive compensation.

Consider Unique Factors to Genocera

- The weighted average exercise price of our outstanding options as of December 31, 2019 was \$11.65, which is significantly higher than the \$1.72 closing price of the Company's common stock on the Nasdaq on March 31, 2020. Because our outstanding options are significantly underwater, additional equity awards are necessary to properly incentivize and deliver competitive equity compensation to our management team and other key employees.

We are Committed to the Effective Utilization of Shares

- Our Compensation Committee has engaged Pay Governance, an independent compensation consulting firm, to assist it in evaluating matters associated with competitive equity compensation practices, underwater stock options, the reduced value of prior awards and in structuring a compensation program designed to optimize our share utilization.
- We have maintained an annual burn rate within competitive biotechnology company market ranges in the last three fiscal years of 2.5%, 6.1% and 5.3% in 2019, 2018, and 2017, respectively, and plans to continue granting market competitive equity awards in future years.
- Our overhang (outstanding awards and shares available for future grant, excluding the proposed share increase of 2,800,000 shares), as of March 31, 2020, was 9.6% of stock outstanding.

We Require Additional Shares to Meet our Forecasted Needs

We granted equity awards in the form of options and restricted stock units with respect to 1,527,586 shares in April 2020, including equity awards with respect to 538,365 shares that are subject to stockholder approval of this proposal. A portion of these equity awards were granted in the form of restricted stock units, which we believe will be a more effective tool to retain and motivate our employees than awards consisting solely of stock options. We anticipate granting additional awards in the form of options and restricted stock units in 2020 in order to conserve our cash resources and to retain and motivate our employees. As a result, our Board of Directors, based on the recommendation of our Compensation Committee, concluded that it was necessary to increase the number of shares available for issuance under our 2014 Equity Plan.

The Individual Participant Limits in our 2014 Equity Plan are no longer necessary and the Non-Employee Director Limits do not appropriately reflect our Capitalization or the Value of our Shares

Because, as a result of a change in law, the inclusion of individual participant limits under our 2014 Equity Plan no longer are required for certain tax purposes, our Board of Directors concluded that these individual participant limits were no longer necessary and eliminated such limits from the plan. The annual limitation on shares that may be granted to our non-employee directors under our 2014 Equity Plan, however, will remain in effect. Our Board of Directors has concluded that such limitation should be increased, subject to the same aggregate dollar cap that currently applies, due to the decrease in the market value of our common stock from when our 2014 Equity Plan was last approved. Following this increase, no non-employee director may be granted awards with respect to more than 50,000 shares of our common stock (or, if less, awards having a grant date fair value of \$1 million) in respect of his or her service as a director. This limit does not apply to any award granted pursuant to a director's election to receive shares of our common stock in lieu of cash fees.

Additional information regarding our equity compensation plans

As of March 31, 2020, 1,251,700 shares remain available for issuance under our 2014 Equity Plan (not taking into account the April 2020 equity awards described above). The table below includes aggregate information regarding awards outstanding under our 2014 Equity Plan, the number of shares available for future awards under our 2014 Equity Plan, and the proposed number of shares that would be available for issuance under our 2014 Equity Plan if this proposal is approved by our stockholders. The table below does not include the future effect, in 2021 and beyond, of the evergreen provision of our 2014 Equity Plan, which would remain in effect in accordance with the current terms of our 2014 Equity Plan if stockholders approve this proposal.

	Number of shares (1)	As a percentage of stock outstanding (as of March 31, 2020)
Outstanding stock options under our 2007 Equity Plan and our 2014 Equity Plan(2)	1,344,746	4.9%
Total shares subject to outstanding awards under our 2007 Equity Plan and our 2014 Equity Plan(2)	1,390,016	5.0%
Total shares available for future awards under our 2014 Equity Plan(3)	1,251,700	4.5%
Proposed additional shares to be available for future awards under our 2014 Equity Plan(4)	2,800,000	10.1%
Total shares outstanding under existing equity awards under our 2007 Equity Plan and our 2014 Equity Plan and proposed to be available for issuance under our 2014 Equity Plan (3)	5,441,716	19.7%
Total shares subject to outstanding options under our 2014 ESPP (5)	35,296	0.1%
Total shares available for future options under our 2014 ESPP	182,670	0.7%
Total shares outstanding under existing options and available for issuance under our 2014 ESPP (5)	217,966	0.8%
Total shares subject to outstanding options granted under inducement awards (6)	25,000	0.1%
Total	5,684,682	20.6%

(1) The number of shares of our common stock listed in this column (and in the narrative disclosure in this proposal) have been proportionately adjusted to reflect our eight-to-one reverse stock split in May 2019. Outstanding equity awards and total shares available under the respective plans listed in the table are, in each case, as of March 31, 2020.

(2) Does not include the 1,527,586 shares of our common stock that are subject to equity awards granted in April 2020 in the form of options and restricted stock units, including equity awards with respect to 538,365 shares of our common stock that are subject to stockholder approval of this proposal.

(3) Does not include the future effect, in 2021 and beyond, of the evergreen provision of our 2014 Equity Plan.

(4) Share counting provisions, including adjustments to the number of shares available under our 2014 Equity Incentive Plan, are described below under “Authorized Shares” and “Certain Transactions; Certain Adjustments”.

(5) Outstanding options under our 2014 ESPP are estimated based on the rate of payroll deductions and the closing price of our common stock on March 31, 2020.

(6) Represents options to purchase shares of common stock granted as inducement awards in accordance with Nasdaq Listing Rule 5635(c)(4).

A summary of the material features of our 2014 Equity Plan, as proposed to be amended, is below. The following summary is qualified in its entirety by reference to our Amended and Restated 2014 Equity Plan, a copy of which is set forth as Appendix B.

Material Features of the 2014 Equity Plan

Administration

Our 2014 Equity Plan is administered by our Compensation Committee. Our Compensation Committee has the authority to, among other things, interpret our 2014 Equity Plan, determine eligibility for and grant awards, determine, modify or waive the terms and conditions of any awards, determine the form of settlement of awards (whether in cash, shares of our common stock or other property), prescribe forms, rules and procedures relating to the plan, and otherwise do all things necessary or appropriate to carry out the purposes of our 2014 Equity Plan. Our Compensation Committee's determinations under our 2014 Equity Plan are conclusive and binding. Our Compensation Committee may delegate its authority under our 2014 Equity Plan to the extent permitted by applicable law. References in this summary to our Compensation Committee refer to our Compensation Committee and its applicable delegates.

Eligibility

Our key employees, directors, consultants and advisors are eligible to participate in our 2014 Equity Plan. As of March 31, 2020, we estimate that approximately 70 employees, 8 non-employee directors, 10 consultants and 4 advisors would be eligible to participate in our 2014 Equity Plan.

Authorized Shares

Subject to adjustment, as described below, the maximum number of shares of our common stock that may be delivered in satisfaction of awards under our 2014 Equity Plan as of March 31, 2020 is 2,541,695 shares, of which 1,251,700 shares remained available for grant as of March 31, 2020. If this proposal is approved by our stockholders, an additional 2,800,000 shares will become available under our 2014 Equity Plan. The number of shares of our common stock available for issuance under our 2014 Equity Plan will be automatically increased annually on each January 1st, through January 1, 2024, in an amount equal to the lesser of 4% of outstanding shares of our common stock as of the close of business on the immediately preceding December 31st or the number of shares determined by our Board of Directors. Subject to adjustment, as described below, no more than 1,125,000 shares of our common stock may be delivered in satisfaction of incentive stock options, or ISOs, awarded under our 2014 Equity Plan.

The shares of our common stock to be issued under our 2014 Equity Plan may be authorized but unissued shares of our common stock or previously issued shares of our common stock acquired by us. Any shares of our common stock underlying awards that are settled in cash, expire or become unexercisable without having been exercised or that are forfeited or repurchased by us will again be available for issuance under our 2014 Equity Plan. In addition, the number of shares of our common stock delivered in satisfaction of awards will be determined net of shares of our common stock withheld by us in payment of the exercise price of an award or in satisfaction of tax withholding requirements with respect to an award.

The closing price of our common stock as reported on Nasdaq on March 31, 2020 was \$1.72 per share.

Non-Employee Director Limits

A participant who is a non-employee director on our Board of Directors may not receive awards in any calendar year with respect to the lesser of (A) 50,000 shares of our common stock, or (B) shares of our common stock having an aggregate grant date fair value in excess of \$1 million (such limit does not apply to any award granted pursuant to a director's election to receive shares of our common stock in lieu of cash fees).

Types of Awards

Our 2014 Equity Plan provides for awards of stock options, SARs, restricted stock, unrestricted stock, stock units, performance awards and other awards convertible into or otherwise based on shares of our common stock. Eligibility for stock options intended to be ISOs is limited to our employees. Dividend equivalents may also be provided in connection with an award under our 2014 Equity Plan.

Stock options and SARs. The exercise price of a stock option, and the base value against which a SAR is to be measured, may not be less than the fair market value (or, in the case of an ISO granted to a ten percent stockholder, 110% of the fair market value) of shares of our common stock on the date of grant. Our Compensation Committee will determine the time or times at which stock options or SARs become exercisable and the terms on which such awards remain exercisable.

Restricted and unrestricted stock. A restricted stock award is an award of shares of our common stock subject to forfeiture restrictions, while an unrestricted stock award is not subject to such restrictions.

Stock units. A stock unit award is an award denominated in shares of our common stock that entitles the participant to receive shares of our common stock or cash measured by the value of the shares of our common stock in the future. The delivery of shares of our common stock or cash under a stock unit may be subject to the satisfaction of performance conditions or other vesting conditions.

Performance awards. A performance award is an award the vesting, settlement or exercisability of which is subject to the satisfaction of specified performance criteria.

Other awards. Other awards are awards that are convertible into or otherwise based on shares of our common stock.

Vesting; Termination of Employment or Service

Our Compensation Committee has the authority to determine the vesting schedule applicable to each award, and to accelerate the vesting or exercisability of any award. Our Compensation Committee will determine the effect of termination of employment or service on an award. Unless otherwise provided by our Compensation Committee, upon a termination of a participant's employment or service, all unvested stock options and SARs then held by the participant will terminate and all other unvested awards will be forfeited and all vested stock options and SARs then held by the participant will remain outstanding for three months following such termination, or one year in the case of death, or, in each case, until the applicable expiration date, if earlier. All stock options and SARs held by a participant immediately prior to the participant's termination of employment or service will immediately terminate if such termination is for cause, as defined in our 2014 Equity Plan, or occurs in circumstances that would have constituted grounds for the participant's employment or service to be terminated for cause.

Non-Transferability of Awards

Awards under our 2014 Equity Plan may not be transferred other than by the laws of descent and distribution, unless, for awards other than ISOs, otherwise provided by our Compensation Committee.

Recovery of Compensation

Our Compensation Committee may cancel, rescind, withhold or otherwise limit or restrict any award at any time under our 2014 Equity Plan if the participant is not in compliance with the provisions of our 2014 Equity Plan or any award thereunder or if the participant breaches any agreement with our company with respect to non-competition, non-solicitation or confidentiality. Our Compensation Committee also may recover any award or payments or gain in respect of any award under our 2014 Equity Plan in accordance with any applicable company recoupment policy or as otherwise required by applicable law or applicable stock exchange listing standards.

Certain Transactions; Certain Adjustments

In the event of a consolidation, merger or similar transaction or series of related transactions, including a sale or other disposition of shares of our common stock, in which our company is not the surviving corporation or that results in the acquisition of all or substantially all of our then outstanding shares of common stock by a single person or entity or by a group of persons and/or entities acting in concert, a sale of all or substantially all of our assets or our dissolution or liquidation (any of the foregoing, a "covered transaction"), our Compensation Committee may, among other things, provide for the continuation or assumption of outstanding awards, for new grants in substitution of outstanding awards, for the accelerated vesting or delivery of shares under awards or for a cash-out of outstanding awards, in each case, on such terms and with such restrictions as it deems appropriate. Except as our Compensation Committee may otherwise determine, awards not assumed in connection with such a transaction will terminate automatically and, in the case of outstanding restricted stock, will be forfeited automatically, upon the consummation of a covered transaction.

In the event of a stock dividend, stock split or combination of shares, including a reverse stock split, recapitalization or other change in our capital structure that constitutes an equity restructuring within the meaning of FASB ASC 718, our Compensation Committee will make appropriate adjustments to the maximum number of shares of our common stock that may be delivered under, and the ISO and individual share limits included in, our 2014 Equity Plan, and will also make appropriate adjustments to the number and kind of shares or securities subject to awards, the exercise prices of such awards or any other terms of awards affected by such change. Our Compensation Committee may also make the types of adjustments described above to take into account distributions and other events other than those listed above if it determines that such adjustments are appropriate to avoid distortion in the operation of our 2014 Equity Plan.

Amendment; Termination

Our Compensation Committee may amend our 2014 Equity Plan or outstanding awards, or terminate our 2014 Equity Plan as to future grants of awards, except that our Compensation Committee will not be able to alter the terms of an award if it would affect materially and adversely a participant's rights under the award without the participant's consent (unless expressly provided in our 2014 Equity Plan or the right to alter the terms of an award was expressly reserved by our Compensation Committee at the time the award was granted). Stockholder approval will be required for any amendment to our 2014 Equity Plan to the extent such approval is required by law, including applicable stock exchange requirements.

Certain Federal Income Tax Consequences

This following is a summary of certain U.S. federal income tax consequences associated with awards granted under our 2014 Equity Plan. The summary does not purport to cover federal employment tax or other U.S. federal tax consequences that may be associated with our 2014 Equity Plan, nor does it cover state, local or non-U.S. taxes.

Stock Options (other than ISOs)

In general, a participant has no taxable income upon the grant of a stock option that is not intended to be an ISO (an "NSO") but realizes income in connection with the exercise of the NSO in an amount equal to the excess (at the time of exercise) of the fair market value of the shares acquired upon exercise over the exercise price. A corresponding deduction is generally available to the Company, subject to the limitations of the Code. Upon a subsequent sale or exchange of the shares, any recognized gain or loss is treated as a capital gain or loss for which the Company is not entitled to a deduction.

ISOs

In general, a participant realizes no taxable income upon the grant or exercise of an ISO. However, the exercise of an ISO may result in an alternative minimum tax liability to the participant. With some exceptions, a disposition of shares acquired upon exercise of an ISO within two years from the date of grant or within one year after exercise produces ordinary income to the participant (and generally a deduction to the Company) equal to the value of the shares at the time of exercise less the exercise price. Any additional gain recognized in the disposition is treated as a capital gain for which the Company is not entitled to a deduction. If the participant does not dispose of the shares until after the expiration of these one and two-year holding periods, any gain or loss recognized upon a subsequent sale of shares acquired upon exercise of an ISO is treated as a long-term capital gain or loss for which the Company is not entitled to a deduction.

SARs

The grant of a SAR does not itself result in taxable income, nor does taxable income result merely because a SAR becomes exercisable. In general, a participant who exercises a SAR for shares of stock or receives payment in cancellation of a SAR will have ordinary income equal to the amount of any cash and the fair market value of any stock received. A corresponding deduction is generally available to the Company, subject to the limitations of the Code.

Restricted Stock Awards

A participant who is awarded or purchases shares subject to a substantial risk of forfeiture generally does not have income until the risk of forfeiture lapses. When the risk of forfeiture lapses, the participant has ordinary income equal to the excess of the fair market value of the shares at that time over the purchase price, if any, and a corresponding deduction is generally available to the Company. However, a participant may make an election under Section 83(b) of the Code to be taxed on restricted stock when it is acquired rather than later, when the substantial risk of forfeiture lapses. A participant who makes an effective 83(b) election will realize ordinary income equal to the fair market value of the shares as of the time of acquisition less any price paid for the shares. A corresponding deduction will generally be available to the Company, subject to the limitations of the Code. If a participant makes an effective 83(b) election, no additional income results by reason of the lapsing of the restrictions.

For purposes of determining capital gain or loss on a sale of shares awarded under our 2014 Equity Plan, the holding period in the shares begins when the participant recognizes taxable income with respect to the transfer. The participant's tax basis in the shares equals the amount paid for the shares plus any income realized with respect to the transfer. However, if a participant makes an effective 83(b) election and later forfeits the shares, the tax loss realized as a result of the forfeiture is limited to the excess of what the participant paid for the shares (if anything) over the amount (if any) realized in connection with the forfeiture.

Unrestricted Stock Awards

A participant who purchases or is awarded unrestricted stock generally has ordinary income equal to the excess of the fair market value of the shares at that time over the purchase price, if any, and a corresponding deduction is generally available to the Company, subject to the limitations of the Code.

Restricted Stock Units

The grant of a restricted stock unit does not itself generally result in taxable income. Instead, the participant is taxed upon vesting and settlement (and a corresponding deduction is generally available to the Company, subject to the limitations of the Code), unless he or she has made a proper election to defer receipt of the shares (or cash if the award is cash settled) under Section 409A

of the Code. If the shares delivered are restricted for tax purposes, the participant will instead be subject to the rules described above for restricted stock.

New Plan Benefits

Because future awards under our 2014 Equity Plan will be granted in the discretion of our Board of Directors or our Compensation Committee, the type, number, recipients, and other terms of such awards cannot be determined at this time. The following table sets forth the awards that were granted to our named executive officers, our current executive officers as a group, our current non-employee directors as a group, and our other employees (who are not executive officers) as a group in April 2020 that are subject to stockholder approval of this proposal.

Name and Position	Number of Options	Number of Restricted Stock Units
William Clark, President and Chief Executive Officer	106,688	27,344
Girish Aakalu, Ph.D., Chief Business Officer	24,938	6,623
Thomas Davis, M.D., Chief Medical Officer	24,938	6,623
Executive Group	244,502	63,943
Non-Executive Director Group	—	—
Non-Executive Officer Employee Group	127,969	101,951

Equity Compensation Plan Information

The following table provides information as of December 31, 2019 about our common stock that may be issued upon the exercise of options, warrants, and rights under our existing equity compensation plans. The number of shares of our common stock and the exercise prices listed in the table below have been proportionally adjusted to account for our eight-to-one reverse stock split in May 2019.

Plan Category	Number of Securities to be Issued Upon Exercise of Outstanding Options and Rights	Weighted-Average Exercise Price of Outstanding Options and Rights	Number of Securities Remaining Available for Future Issuance Under Equity Compensation Plans
Equity compensation plans approved by security holders (1)	1,298,105	\$ 11.69	245,430
Equity compensation plans not approved by security holders (2)	25,000	\$ 9.68	—
Total	1,323,105	\$ 11.65	245,430

- (1) Represents options to purchase shares of our common stock that were granted under the Genoccea Biosciences, Inc. Amended and Restated 2007 Equity Incentive Plan and our 2014 Equity Plan and were outstanding on December 31, 2019.
- (2) Represents options to purchase shares of our common stock granted as inducement awards in accordance with Nasdaq Listing Rule 5635(c)(4) that were outstanding on December 31, 2019.

**THE BOARD OF DIRECTORS UNANIMOUSLY RECOMMENDS THAT YOU VOTE
FOR
THE APPROVAL OF THE AMENDMENT TO THE AMENDED AND RESTATED GENOCEA BIOSCIENCES, INC. 2014 EQUITY
INCENTIVE PLAN
(PROPOSAL 3 ON YOUR PROXY CARD)**

PROPOSAL NO. 4—TO APPROVE, ON AN ADVISORY BASIS, OF THE COMPENSATION PAID TO OUR NAMED EXECUTIVE OFFICERS

We are seeking your advisory vote, as required by Section 14A of the Exchange Act, to approve the compensation paid to our named executive officers for 2019, as described in the “Executive Compensation” section of this proxy statement. Because your vote is advisory, it will not be binding on our Compensation Committee or our Board of Directors. However, our Compensation Committee and our Board of Directors will review the voting results and take them into consideration when making future decisions regarding executive compensation.

The Board of Directors unanimously recommends that stockholders vote in favor of the following resolution:

“RESOLVED, that the compensation paid to the named executive officers of Genoea Biosciences, Inc., as disclosed pursuant to the compensation disclosure rules of the Securities and Exchange Commission, including the Summary Compensation Table and the related narrative disclosure included the “Executive Compensation” section of this proxy statement, is hereby APPROVED.”

Vote Required

Although the vote we are asking you to cast is non-binding, our Compensation Committee and our Board of Directors value the views of our stockholders and will consider the outcome of the vote when determining future compensation arrangements for our named executive officers. The resolution will be approved, on an advisory basis, if the votes cast FOR exceed the votes cast AGAINST the proposal. Abstentions and broker non-votes will have no effect on the voting of this proposal. We expect to hold an advisory vote to approve the compensation of our named executive officers annually until the next vote on the advisory frequency of such advisory votes, which will occur no later than our 2026 annual meeting of stockholders.

**THE BOARD OF DIRECTORS UNANIMOUSLY RECOMMENDS THAT YOU VOTE
FOR
THE APPROVAL, ON AN ADVISORY BASIS, OF THE COMPENSATION PAID TO OUR NAMED EXECUTIVE OFFICERS**

(PROPOSAL 4 ON YOUR PROXY CARD)

EXECUTIVE COMPENSATION

This section describes the compensation awarded or paid to, or earned by, our named executive officers for 2019. Our named executive officers for 2019 are:

- William Clark, our President and Chief Executive Officer;
- Girish Aakalu, Ph.D., our Chief Business Officer; and
- Thomas Davis, M.D., our Chief Medical Officer.

Compensation Philosophy and Objectives

Our executive compensation program is designed to:

- attract, motivate and retain qualified and talented executives;
- be fair, reasonable and market competitive;
- provide a strong link between performance and pay, and reward performance;
- be flexible to support our long-term growth strategy;
- align the incentives of our executive officers with our corporate strategies and business objectives and the long-term interests of our stockholders; and
- promote long-term equity ownership by our executives.

To achieve these objectives, each year, our Compensation Committee considers a variety of factors in assessing the competitiveness of our executive compensation program and the individual compensation of each of our executive officers, including our named executive officers. These factors include the executive officer's experience and individual performance, the Company's performance as a whole, and data from compensation surveys, as well as compensation paid at companies in our peer group, as described below, cost of living increases and general industry conditions. Our Compensation Committee does not assign any specific weighting to any one factor when making compensation decisions. In furtherance of our pay-for-performance philosophy, actual compensation paid to our executive officers is correlated to the achievement of corporate goals, our stock price and individual performance.

Market Benchmarks and Competitive Analysis

In making compensation decisions, our Compensation Committee reviews publicly available compensation data and survey data provided by its compensation consultant, Pay Governance, from a group of publicly traded, national and regional companies in the biopharmaceutical and biotechnology industries. Our Compensation Committee establishes our peer group, based on the recommendation of its compensation consultant, based on the following criteria:

- companies whose scientific stage of development (R&D expense) and market capitalization are similar, though not necessarily identical, to ours;
- companies with similar executive positions to ours;
- companies against which we believe we compete for executive talent; and
- public companies based in the United States whose compensation and financial data are available in proxy statements or through widely available compensation surveys.

Our Compensation Committee, working with its compensation consultant, reviews the companies in our peer group annually, based on agreed criteria regarding which companies should be included in the peer group, and makes adjustments as necessary to ensure the peer group continues to properly reflect the market in which we compete for talented executives. The peer group consisted of the following companies from November 2018 until November 2019.

2018 Peer Group

Advaxis, Inc.	Infinity Pharmaceuticals, Inc.
aTyrPharma, Inc.	Leap Therapeutics, Inc.
Calithera Biosciences, Inc.	Merrimack Pharmaceuticals, Inc.
Catabasis Pharmaceuticals, Inc.	Mersana Therapeutics, Inc.
Celldex Therapeutics, Inc.	Neon Therapeutics, Inc.
Cidara Therapeutics, Inc.	OncoMed Pharmaceuticals, Inc.
Dicerna Pharmaceuticals, Inc.	OncoSec Medical Incorporated
Gritstone Oncology, Inc.	Spring Bank Pharmaceuticals
Idera Pharmaceuticals, Inc.	Tetraphase Pharmaceuticals, Inc.

Based on the criteria listed above, in November 2019, our Compensation Committee approved an updated peer group consisting of the following companies:

Advaxis, Inc.	Infinity Pharmaceuticals, Inc.
aTyrPharma, Inc.	Jounce Therapeutics, Inc.
Calithera Biosciences, Inc.	Leap Therapeutics, Inc.
Catabasis Pharmaceuticals, Inc.	Mersana Therapeutics, Inc.
Celldex Therapeutics, Inc.	Neon Therapeutics, Inc.
Cidara Therapeutics, Inc.	OncoSec Medical Incorporated
Cue Biopharma, Inc.	Pieris Pharmaceuticals, Inc.
Gritstone Oncology, Inc.	Spring Bank Pharmaceuticals
Idera Pharmaceuticals, Inc.	Surface Oncology, Inc.

Certain companies included in our 2018 peer group were removed from our 2019 peer group because they were acquired or went through a significant reorganization or their market capitalization was no longer determined to be comparable to ours. Certain companies were added to our peer group in 2019 because they aligned with our scientific stage of development.

We believe that the data from our Peer Group provides us with appropriate compensation benchmarks for evaluating the compensation of our executive officers. Notwithstanding the similarities of the companies in our Peer Group to us, due to the nature of our business, we compete for executive talent with many public companies that are larger and more established than we are, or that possess greater resources than we do, and with smaller private companies that may be able to offer greater equity compensation potential, as well as with prestigious academic and non-profit institutions. Our Compensation Committee takes these factors into account in assessing executive compensation and also reviews survey data to form a broader market perspective on compensation in the market.

Our Compensation Committee evaluates our executive compensation program with the goal of setting total compensation at levels that align with a total rewards strategy appropriate for our size and stage of development and achieve the objectives of our executive compensation program, as described above. Our Compensation Committee generally targets base salaries, annual bonuses, and annual equity awards for our executive officers around the market median for our peer group, with variability in actual payments based on corporate and individual performance. Our Compensation Committee may consider other factors, including market factors; the experience level of the executive; his or her total responsibilities; the executive's contributions in helping to achieve established corporate goals; and overall contributions and performance, in determining variations to this general practice in making recommendations to our Board of Directors.

Key Performance Factors in Determining Executive Compensation

Because the biopharmaceutical industry is characterized by a very long product development cycle, including a lengthy R&D period and a rigorous regulatory approval process, including the requirements for multiple phases of human testing and the need to meet a significant number of other government requirements, many of the traditional financial performance metrics, such as product sales, revenues and profits, used to evaluate successful performance are inappropriate for a biopharmaceutical company with a continued development focus, such as Genocera. Instead, the specific performance our Compensation Committee considers when evaluating the compensation of our named executive officers include:

- key R&D achievements
- initiation and progress of clinical trials for our product candidates;
- expansion of our manufacturing and other operation capabilities;
- achievement of regulatory milestones;
- new business initiatives including financings; and
- our progress in building out key functions and managing our growth while maintaining a high-performing organization and culture.

Annual corporate goals are proposed by our senior leadership team at the beginning of each year and approved by our Board of Directors. During the first quarter of each year, our Compensation Committee, with the input of the senior leadership team, evaluates our corporate performance for the prior year against the corporate goals set for that year, and, taking into account other corporate achievements and developments, recommends a corporate performance rating to be approved by our Board of Directors. For 2019, our Compensation Committee approved a corporate performance rating of 95% based on our corporate performance, as further described below under “Elements of Executive Compensation - Annual Cash Bonuses”. Our Compensation Committee, with the input of our Chief Executive Officer, also evaluates the individual performance of our executive officers (other than our Chief Executive Officer) against their individual goals for the year. For 2019, the Compensation Committee approved an individual performance rating of 100% for all of our executive officers. Our Compensation Committee and our Board of Directors also evaluate the performance of our Chief Executive Officer each year, although 100% of his annual bonus is based on the achievement of our corporate goals.

During or before the first quarter of each year, our Compensation Committee typically evaluates compensation levels for such year for our executive officers, including the amount of each executive officer’s base salary, target annual bonus and annual equity awards, taking into consideration the compensation paid by members of our peer group, our prior year’s overall corporate performance against the established corporate goals, as well as each individual executive officer’s contributions to achievement of such corporate goals, individual performance and the other factors described above, in making compensation recommendations to our Board of Directors. Our Board of Directors considers these recommendations in determining the compensation for our executive officers for the applicable year.

Elements of Executive Compensation

The compensation of our named executive officers consists of base salary, annual cash bonuses and equity awards, as well as employee benefits that are made available to our salaried employees generally. Our named executives are also entitled to compensation and benefits upon certain terminations of employment, including following a change of control transaction, as described under “Employment Letter Agreements” below.

Base Salaries. Base salaries for our named executive officers are reviewed annually by our Compensation Committee and are set by our Board of Directors. When making its base salary recommendations to our Board of Directors, our Compensation Committee takes the factors described above into account, but does not assign any specific weighting to any one factor. Our Board of Directors determines each named executive officer’s base salary after reviewing the Compensation Committee’s recommendation with respect to such salaries. In 2019, on the recommendation of our Compensation Committee, our Board of Directors approved an increase of 3.5% to the base salary for Mr. Clark (to \$535,613 per year) and Dr. Davis (to \$439,875 per year). Dr. Aakalu's base salary of \$385,000 per year was set when his employment began on December 6, 2018 and was not increased in 2019.

Annual Cash Bonuses. Our annual cash bonus program promotes and rewards the achievement of key strategic business goals and individual performance goals. For 2019, the target annual bonus as a percentage of base salary was 50% for Mr. Clark and 40% for each of Dr. Aakalu and Dr. Davis. In the case of Mr. Clark, 100% of his annual bonus was based on the achievement of pre-established corporate performance goals and, in the case of Dr. Aakalu and Dr. Davis, their respective annual bonuses were based on the achievement of pre-established corporate performance goals and pre-established individual performance goals.

At the beginning of 2019, our Compensation Committee established the corporate performance goals for 2019 and the weighting for each goal. These corporate performance goals included key strategic and financial goals related to business development collaborations and financings, cash management, the development and commencement of certain clinical and commercial programs, and other strategic objectives related to our clinical pipeline. Also, at the beginning of 2019, Mr. Clark, working with Dr. Aakalu and Dr. Davis, established individual performance goals for each of Dr. Aakalu and Dr. Davis and their weightings. These goals included, to the extent applicable to the executive, objectives related to oversight of clinical activities for compliance with laws, developing and conducting clinical programs and studies, research and development, managing studies

according to schedule and within budgets, business and corporate development and demonstrating leadership with respect to direct reports.

In February 2020, our Compensation Committee met to review and consider the level of corporate and individual performance goals that were achieved for purposes of making its recommendation to our Board of Directors regarding the amount of the annual cash bonus earned by our named executive officers for 2019. The Compensation Committee reviewed and evaluated our corporate performance against the pre-established corporate performance goals for 2019, taking into consideration Mr. Clark's evaluation of our performance. With respect to the individual performance goals applicable to Dr. Aakalu and Dr. Davis, our Compensation Committee also considered Mr. Clark's determination that Dr. Aakalu and Dr. Davis had each achieved 100% of such individual performance goals. After reviewing the achievement of our 2019 corporate performance goals, and after considering Mr. Clark's determination regarding the level of achievement of the individual performance goals for Dr. Aakalu and Dr. Davis, our Compensation Committee recommended, and our Board of Directors approved, a 95% level of achievement of corporate performance goals and a 100% level of achievement of Dr. Aakalu's and Dr. Davis' individual goals. As a result, our Board of Directors approved an annual cash bonus of \$241,695 for Mr. Clark, \$146,300 for Dr. Aakalu, and \$167,153 for Dr. Davis for 2019.

Equity Awards. Our named executive officers have each been granted stock options, including options intended to qualify as incentive stock options. Stock option awards serve to align the interests of our named executive officers with our stockholders because no value is created unless the value of our common stock appreciates after grant. Stock option awards also encourage retention through the use of time-based vesting conditions. We have from time to time in the past also granted stock options that are subject to performance-based vesting conditions, thereby incentivizing the achievement of key strategic goals.

In February 2019, Mr. Clark, Dr. Aakalu and Dr. Davis were each granted options to purchase 93,751, 37,500, and 37,500 shares, respectively, of our common stock under our 2014 Equity Plan. These stock options vest in equal monthly installments over the 48 months following the date of grant, generally subject to the executive's continued employment. Pursuant to each named executive officer's employment letter agreement, stock options held by the executive would vest automatically upon certain terminations of employment following a change of control. See "Employment Letter Agreements" below for additional details about each individual's agreement.

Benefits. We provide modest benefits to all of our salaried employees, including our executive officers, which are limited to participation in our 401(k) plan, our employee stock purchase plan, and our health and welfare benefit plans.

Employment Letter Agreements. We have entered into employment letter agreements with Mr. Clark, Dr. Aakalu and Dr. Davis that include severance and change of control protections. Mr. Clark and Dr. Davis are also subject to restrictive covenants covering noncompetition, non-solicitation and confidentiality. See "Employment Letter Agreements" below for additional details about these agreements.

Summary Compensation Table

The following table sets forth information about compensation earned, awarded or paid to our named executive officers for 2019 and, for Mr. Clark, 2018. Dr. Aakalu and Dr. Davis were not named executive officers for 2018, and, as a result, their 2018 compensation is not included in the table below.

Name and principal position	Year	Salary (\$)(1)	Bonus (\$)(2)	Option awards (\$)(3)	Nonequity incentive plan compensation (\$)(4)	All other compensation (\$)(5)	Total (\$)
William Clark, President and Chief Executive Officer	2019	532,594		282,272	241,695	6,435	1,062,996
	2018	514,583		583,459	207,000	5,984	1,311,026
Girish Aakalu, Ph.D., Chief Business Officer	2019	385,000	150,000	112,908	146,300	3,850	798,058
Thomas Davis, M.D., Chief Medical Officer	2019	437,396		112,908	167,153	32,201	749,658

(1) Salaries include amounts contributed by the named executive officer to our 401(k) plan.

(2) The amount shown reflects a signing bonus paid to Dr. Aakalu in 2019 in connection with his commencement of employment with us in December 2018.

- (3) Amounts shown reflect the aggregate grant date fair value of options to purchase shares of our common stock granted in the applicable year, computed in accordance with ASC 718, excluding the effect of estimated forfeitures. Assumptions used in the calculation of these amounts are included in Note 10 to our consolidated financial statements included in our Annual Report.
- (4) Amounts shown for Dr. Aakalu and Dr. Davis reflect the annual cash bonuses paid to them for 2019 that were earned based on the achievement of Company and individual performance goals, and, in the case of Mr. Clark, the amounts shown reflect the annual cash bonuses paid to him for the applicable year based solely on the achievement of Company performance goals.
- (5) Amounts shown reflect employer matching contributions under our 401(k) plan for all of our named executive officers. For Dr. Davis, the 2019 amount shown includes a 10-month housing reimbursement of \$26,430.

Outstanding Equity Awards at Fiscal Year-End

The following table sets forth information regarding equity awards held by our named executive officers as of December 31, 2019.

Name	Option 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 \$(6)	Option Expiration Date (7)
William Clark	3,090 (1)	—	—	\$ 22.88	12/17/2020
	—	—	4,976 (2)	\$ 22.88	12/17/2020
	42,571 (3)	—	—	\$ 16.16	2/17/2021
	10,209 (4)	—	—	\$ 27.60	7/25/2023
	16,701 (5)	—	—	\$ 27.60	7/25/2023
	17,250 (1)	—	—	\$ 72.64	2/26/2025
	34,500 (1)	1,500 (1)	—	\$ 24.72	2/2/2026
	25,500 (1)	10,500 (1)	—	\$ 37.36	2/28/2027
	49,500 (1)	58,500 (1)	—	\$ 7.84	2/8/2028
	19,531 (1)	74,219 (1)	—	\$ 4.32	2/7/2029
Tom Davis, M.D.	18,229 (3)	44,272 (3)	—	\$ 6.32	10/1/2028
	7,811 (1)	29,689 (1)	—	\$ 4.32	2/7/2029
Girish Aakalu, Ph.D.	20,312 (3)	60,938 (3)	—	\$ 4.48	12/13/2028
	7,811 (1)	29,689 (1)	—	\$ 4.32	2/7/2029

- (1) Reflects time-based options to purchase shares of our common stock that vest in 48 equal monthly installments following the date of grant, generally subject to the executive's continued employment.
- (2) Reflects performance-based options to purchase shares of our common stock that vest upon the company's achievement of specified strategic financing or development milestones, generally subject to Mr. Clark's continued employment. These performance-based stock options remain unvested as the performance condition has not yet been achieved.
- (3) Reflects time-based options to purchase shares of our common stock that vest as to 25% of the shares subject to the stock option on the vesting commencement date (approximately 12 months from the grant date) and thereafter vest in equal monthly installments over the following 36 months, generally subject to the executive's continued employment.
- (4) Represents shares vested with the Company's initial public offering.
- (5) Reflects time-based options to purchase shares of our common stock that vested as to 1/8th of the shares subject to the stock option on the date of grant and that continue to vest in equal monthly installments over 42 months following the date of grant, generally subject to the executive's continued employment.
- (6) The exercise price of each option is not less than the fair market value of a share of our common stock on the date of grant, as determined by our Board of Directors. For stock options granted following our IPO, the exercise price is the closing price of a share of our common stock as reported on Nasdaq on the date of grant of the stock option. The exercise price of all options has been proportionately adjusted to reflect our eight-to-one reverse stock split in May 2019.

- (7) All options have a 10-year term measured from the date of grant and the number of shares subject to all options has been proportionately adjusted to reflect our eight-to-one reverse stock split in May 2019.

Retirement Benefits

We do not maintain any qualified or non-qualified defined benefit plans or supplemental executive retirement plans. We offer a tax-qualified defined contribution retirement plan, which we refer to as our 401(k) plan, to eligible employees, including our named executive officers. Our 401(k) plan permits eligible employees to defer their annual eligible compensation subject to the limitations imposed by the Internal Revenue Service. We may, but are not required to, make discretionary profit-sharing contributions on behalf of eligible employees under this plan. In 2015, we commenced making an employer match of 50% for the first 6% of employee contributions and have continued to do so. Employer matching contributions vest over a four-year period starting with the employee's date of hire.

Employment Letter Agreements

We have entered into an employment letter agreement with each of Mr. Clark, which was amended and restated on January 16, 2014 and became effective prior to our IPO, Dr. Aakalu, which became effective on December 6, 2018, his date of hire, and Dr. Davis, which became effective on October 1, 2018, his date of hire. Each named executive officer's employment letter agreement provides for an initial base salary and target annual bonus as well as severance payments and benefits upon certain terminations of employment, as described below. Dr. Aakalu's employment letter agreement also included a \$150,000 signing bonus, which was paid to him in January 2019. The terms "change of control," "cause," "good reason" and "disability" referred to below are defined in their employment letter agreements.

Termination of Employment without Cause or for Good Reason Following a Change of Control. If, within 12 months after a change of control, Mr. Clark, Dr. Aakalu or Dr. Davis' employment is terminated by us without cause or any such individual terminates their employment for good reason, all stock options and other equity awards then held by Mr. Clark, Dr. Aakalu or Dr. Davis, as applicable, will fully vest. In addition, Mr. Clark, Dr. Aakalu and Dr. Davis will be entitled to receive base salary and payment of COBRA premiums for 15 months (or 18 months, for Mr. Clark) following such termination of employment.

Termination of Employment without Cause or for Good Reason. If Mr. Clark, Dr. Aakalu or Dr. Davis' employment is terminated by us without cause or any of Mr. Clark, Dr. Aakalu or Dr. Davis terminates their employment for good reason other than within 12 months following a change of control as described above, Mr. Clark, Dr. Aakalu and Dr. Davis, as applicable, will be entitled to receive base salary and payment of COBRA premiums for nine (9) months, (or 12 months, for Mr. Clark) following such termination of employment.

Termination of Employment Due to Death or Disability. If Mr. Clark, Dr. Aakalu or Dr. Davis' employment is terminated by us due to disability or death, the named executive officers (or, if applicable, his estate) will receive, a portion of each individual's target annual cash bonus for the year in which such termination of employment occurs, prorated based on the number of days that each individual was employed during such year prior to the date of such termination.

Severance Subject to Release of Claims. Our obligation to provide Mr. Clark, Dr. Aakalu and Dr. Davis with any severance payments or other benefits under their employment letter agreement is conditioned on each individual signing and not revoking an effective release of claims in our favor.

Other Termination of Employment. If Mr. Clark, Dr. Aakalu or Dr. Davis' employment is terminated for any reason other than by us without cause, by any of the individuals for good reason, or due to any of the individual's death or disability, Mr. Clark, Dr. Aakalu or Dr. Davis, as applicable, will only be entitled to receive earned but unpaid base salary through the date of such termination of employment.

280G Better-of Provision. In the event of a change in ownership or control of our Company under Section 280G of the Internal Revenue Code of 1986, as amended (the "Code"), and the regulations thereunder, if any portion of the payments made pursuant to Mr. Clark's, Dr. Aakalu's or Dr. Davis' employment letter agreement (or otherwise) constitute an "excess parachute payment" within the meaning of Section 280G of the Code, each individual, as applicable, will be entitled to receive an amount of such payments reduced so that no portion of the payments would constitute an excess parachute payment, or the amount otherwise payable to the each individual under the employment letter agreement (or otherwise) reduced by all applicable taxes, including the excise tax imposed under Section 4999 of the Code, whichever amount results in the greater amount payable to each individual on an after-tax basis.

As a condition to their employment with us, each of our named executive officers was required to sign and must comply with the terms of a Confidential Information and Invention Assignment Agreement, and in the case of Mr. Clark and Dr. Davis, an At-Will Employment and Non-Competition Agreement pursuant to which he has agreed not to compete with us for a period of 12 months following the termination of his employment and not to solicit our employees or independent contractors for a period of 36 months following the termination of his employment. Each executive has also agreed to covenants relating to the use and disclosure of confidential information and the assignment of inventions.

**PROPOSAL NO. 5—TO APPROVE, ON AN ADVISORY BASIS, THE FREQUENCY OF FUTURE ADVISORY VOTES ON THE
COMPENSATION PAID TO OUR NAMED EXECUTIVE OFFICERS**

We are seeking your advisory vote, as required by the Exchange Act, on how frequently we should have advisory votes on the compensation paid to our named executive officers in the future. Stockholders may vote whether to hold such advisory votes every one, two or three years. We will consider the frequency selected by the highest number of votes cast to be the recommendation of the stockholders. Because your vote is advisory, it will not be binding on our Compensation Committee or our Board of Directors. However, our Compensation Committee and our Board of Directors will review the voting results and take them into consideration when determining the frequency of future advisory votes on the compensation paid to our named executive officers.

Our Board of Directors believes at this time that advisory votes on the compensation paid to our named executive officers should be held every year.

Vote Required

Although this advisory vote on frequency is not binding, the Board and Compensation Committee value the views of our stockholders as to what is an appropriate frequency for advisory votes on the compensation paid to our named executive officers, and welcome the stockholders' recommendation on this proposal. If a plurality of votes is cast in favor of an interval other than one year, the Board intends to consider that alternative frequency prior to determining the frequency for such advisory votes to be submitted to stockholders in the future.

Board of Directors' Recommendation

***THE BOARD OF DIRECTORS UNANIMOUSLY RECOMMENDS THAT
YOU VOTE, ON AN ADVISORY BASIS,
FOR***

***APPROVING AN ANNUAL FREQUENCY FOR FUTURE ADVISORY VOTES ON THE COMPENSATION PAID TO OUR NAMED EXECUTIVE
OFFICERS
(PROPOSAL 5 ON YOUR PROXY CARD)***

**PROPOSAL NO. 6—RATIFICATION OF SELECTION OF INDEPENDENT REGISTERED
PUBLIC ACCOUNTING FIRM**

The Audit Committee and the Board of Directors believe that the continued retention of Ernst & Young LLP as our independent registered public accounting firm is in the best interest of the Company and our stockholders and we are asking our stockholders to ratify the Audit Committee's selection of Ernst & Young LLP as our independent registered public accounting firm for the fiscal year ending December 31, 2020. Although ratification is not required by our amended and restated by-laws or otherwise, the Board of Directors is submitting the selection of Ernst & Young LLP to our stockholders for ratification as a matter of good corporate practice. If the selection is not ratified, the Audit Committee will consider whether it is appropriate to select another independent registered public accounting firm. Even if the selection is ratified, the Audit Committee in its discretion may select a different registered public accounting firm at any time during the year if the committee determines that such a change would be in the best interests of the Company and our stockholders.

The Board of Directors first approved Ernst & Young LLP as our independent registered public accounting firm in 2009, and Ernst & Young LLP has audited our consolidated financial statements at December 31, 2019 and 2018, and for the years ended December 31, 2019 and 2018. Representatives of Ernst & Young LLP are expected to be present at the Annual Meeting. They will be given an opportunity to make a statement at the Annual Meeting if they desire to do so, and they will be available to respond to appropriate questions.

The Audit Committee pre-approves all audit and permitted non-audit services (including the fees and terms thereof) to be performed by Ernst & Young LLP, subject to the de minimis exception for non-audit services that are approved by the Audit Committee prior to the completion of an audit. The Audit Committee may delegate pre-approval authority to one or more members of the Audit Committee consistent with applicable law and listing standards, provided that the decisions of such Audit Committee member or members must be presented to the full Audit Committee at its next scheduled meeting. All of the services described in the following fee table were approved in conformity with the Audit Committee's pre-approval process.

Principal Accountant Fees and Services

We regularly review the services and fees of our independent registered public accounting firm. These services and fees are also reviewed by the Audit Committee on an annual basis. The aggregate fees billed for the fiscal years ended December 31, 2019 and 2018 for each of the following categories of services are as follows:

Fee Category	2019	2018
Audit Fees	\$ 606,313	\$ 769,466
Audit-Related Fees	—	—
Tax Fees	—	—
All Other Fees	—	—
Total Fees	\$ 606,313	\$ 769,466

Audit Fees. Consists of fees billed for professional services rendered for the audit of our annual financial statements, the review of interim financial statements and services provided in connection with our registration statements on Form S-1, Form S-8 and Form S-3.

Audit-Related Fees. Consist of fees billed for assurance and related services that are reasonably related to the performance of the audit or review of our financial statements and are not reported under Audit Fees.

Tax Fees. Consists of fees billed for tax compliance, tax advice and tax planning and includes fees for tax return preparation.

All Other Fees. Consists of all other fees billed other than those described above under Audit Fees, Audit-Related Fees and Tax Fees.

All of the services under the captions "Audit Fees" were pre-approved by our Audit Committee.

Pre-Approval Policies and Procedures

Our Audit Committee has adopted policies and procedures relating to the approval of all audit and non-audit services that are to be performed by our registered public accounting firm. This policy generally provides that we will not engage our registered public accounting firm to render audit or non-audit services unless the service is specifically approved in advance by our Audit Committee or the engagement is entered into pursuant to one of the pre-approval procedures described below.

From time to time, our Audit Committee may pre-approve specified types of services that are expected to be provided to us by our registered public accounting firm during the next 12 months. Any such pre-approval is detailed as to the particular service or type of services to be provided and is also generally subject to a maximum dollar amount.

**THE BOARD OF DIRECTORS UNANIMOUSLY RECOMMENDS THAT YOU VOTE
FOR
THE RATIFICATION OF THE APPOINTMENT OF ERNST & YOUNG LLP AS THE COMPANY'S
INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM.**

(PROPOSAL 6 ON YOUR PROXY CARD)

BENEFICIAL OWNERSHIP OF COMMON STOCK

The following table sets forth information relating to the beneficial ownership of our common stock as of March 31, 2020, by: each person, or group of affiliated persons, known by us to beneficially own more than 5% of our outstanding shares of common stock; each of our directors; each of our named executive officers; and all directors and executive officers as a group.

The percentage of shares beneficially owned is computed on the basis of 27,643,773 shares of our common stock outstanding as of March 31, 2020. The number of shares beneficially owned by each entity, person, director or executive officer is determined in accordance with the rules of SEC, and the information is not necessarily indicative of beneficial ownership for any other purpose. Shares of our common stock that a person has the right to acquire within 60 days of March 31, 2020 are deemed outstanding for purposes of computing the percentage ownership of the person holding such rights, but are not deemed outstanding for purposes of computing the percentage ownership of any other person, except with respect to the percentage ownership of all directors and executive officers as a group. Unless otherwise indicated below, the address for each beneficial owner listed is c/o Genocoea Biosciences, Inc., Cambridge Discovery Park, 100 Acorn Park Drive, Cambridge, MA 02140.

Name and Address of Beneficial Owned	Number of Shares Beneficially Owned	Percentage of Shares Beneficially Owned
5% or greater stockholders:		
New Enterprise Associates 16, L.P. (1) 1954 Greenspring Drive, Suite 600 Timonium, MD 21093	8,943,617	30.46%
S.R. One, Limited (2) 980 Great West Road Brentford, Middlesex, TW8 9GS England	3,676,767	13.15%
BVF Partners L.P. (3) 44 Montgomery Street, 40th Floor San Francisco, CA 94104	2,835,010	9.99%
UBS O'Connor LLC (4) 1 North Wacker Drive, 32 nd Floor Chicago, IL 60606	1,769,460	6.02%
Lincoln Park Capital Fund, LLC (5) 440 North Wells, Suite 410 Chicago, IL 60606	1,631,304	5.89%
Vivo Opportunity, LLC (6) 505 Hamilton Avenue, Suite 2017 Palo Alto, CA 94301	1,443,838	5.11%
Directors and Named Executive Officers:		
William Clark (7)	260,670	*
Girish Aakalu, Ph.D. (8)	42,981	*
Tom Davis (9)	36,455	*
Kenneth Bate (10)	11,267	*
Ali Behbahani, M.D. (11)	4,167	*
Katrine Bosley (12)	18,514	*
Ronald Cooper (13)	10,625	*
Michael Higgins (14)	10,636	*
Howard Mayer, M.D. (15)	8,750	*
Gisela Schwab, M.D. (16)	—	*
George Siber, M.D. (17)	38,662	*
All executive officers and directors as a group (14 persons) (18)	577,061	2.08%

* Represents beneficial ownership of less than one percent of our outstanding common stock.

- (1) Based on a Schedule 13D/A filed with the SEC on June 28, 2019, consisting of 7,225,676 shares of common stock and warrants to purchase 1,717,941 shares of common stock. NEA Partners 16, L.P. ("NEA Partners 16") is the sole general partner of NEA 16. NEA 16 GP, LLC ("NEA 16 LLC") is the sole general partner of NEA Partners 16. The individual managers of NEA 16 LLC are Peter J. Barris, Forest Baskett, Ali Behbahani, Carmen Chang, Anthony A. Florence, Jr., Mohamad H. Makhzoumi, Joshua Makower, David M. Mott, Scott D. Sandell, Peter W. Sonsini and Paul Walker (collectively, the "Managers"). The Managers share voting and dispositive power with regard to the shares held directly by NEA 16.
- (2) Based on a Schedule 13G filed with the SEC on February 28, 2020, consisting of 3,365,884 shares of common stock and 310,883 shares of common stock issuable upon the exercise of warrants. These shares and warrants are held directly by S.R. One, Limited, an indirect wholly-owned subsidiary of GlaxoSmithKline plc.
- (3) Based on a Schedule 13G filed with the SEC on February 14, 2020, consisting of 1,029,507 shares of common stock held of record by Biotechnology Value Fund, L.P. ("BVF"), 849,896 shares of common stock held of record by Biotechnology Value Fund II, L.P. ("BVF2"), 151,803 shares of common stock held of record by Biotechnology Value Trading Fund OS LP ("Trading Fund OS"), and 69,099 shares of common stock held of record by the Partners Managed Accounts ("Managed Accounts"). Also includes 734,705 shares of common stock issuable upon exercise of warrants held by the above referenced BVF entities. Excludes 326,658 shares of common stock issuable upon the exercise of warrants, which are not exercisable within 60 days of March 31, 2020 by virtue of the beneficial ownership limitation described below. The number of shares of common stock into which the warrants are convertible is limited to that number of shares of common stock which would result in the stockholders, together with its affiliates, having an aggregate beneficial ownership of no more than 9.99% of the total issued and outstanding shares of common stock. This beneficial ownership limitation may be increased or decreased to an amount not to exceed 19.99% of the number of shares of common stock outstanding immediately after giving effect to the issuance of shares of common stock issuable upon exercise of warrants.
- (4) Based on a Schedule 13G filed with the SEC on February 13, 2020, consisting of 19,460 shares of common stock and 1,750,000 shares of common stock issuable upon the exercise of warrants. These shares and warrants are held directly by Nineteen77 Global Multi-Strategy Alpha Master Limited ("GLEA") and Nineteen77 Global Fundamental Market Neutral Long/Short Master Limited ("FRLS"), for which UBS O'Connor LLC serves as investment manager.
- (5) Based on Purchase Agreement with Lincoln Park Capital Fund, LLC ("LPC") on October 23, 2019, giving LPC beneficial ownership of 1,256,336 shares of common stock. Prior to the date of the Purchase Agreement, LPC beneficially owned 125,482 shares of common stock and warrants to purchase 62,500 shares of common stock. In January 2020, LPC purchased an additional 186,986 shares of common stock.
- (6) Based on a Schedule 13G/A filed with the SEC on February 14, 2020, consisting of 626,401 shares of common stock, 204,000 shares of common stock upon conversion of Series A convertible preferred stock held of record by Vivo Opportunity Fund, L.P., and 613,437 shares of common stock issuable upon the exercise of warrants. Vivo Opportunity, LLC is the general partner of Vivo Opportunity Fund, L.P. The voting members of Vivo Opportunity, LLC are Frank Kung, Albert Cha, Shan Fu, Gaurav Aggarwal and Michael Chang, none of whom has individual voting or investment power with respect to these shares of common stock and each of whom disclaims beneficial ownership of such shares of common stock. The number of shares of common stock into which the Series A convertible preferred stock are convertible is limited to that number of shares of common stock which would result in the stockholder, together with its affiliates, having an aggregate beneficial ownership of no more than 9.99% of the total issued and outstanding shares of common stock. The number of shares of common stock issuable upon exercise of warrants is limited to that number of shares of common stock which would result in the stockholder, together with its affiliates, having an aggregate beneficial ownership of no more than 4.99% to the total issued and outstanding shares of common stock. This beneficial ownership limitation may be increased or decreased to an amount not to exceed 9.99% of the number of shares of common stock outstanding immediately after giving effect to the issuance of shares of common stock issuable upon exercise of the warrants.
- (7) Consisting of 17,424 shares of common stock and 243,246 shares of common stock that can be acquired upon the exercise of options within 60 days of March 31, 2020.
- (8) Consisting of 2,500 shares of common stock and 40,481 shares of common stock that can be acquired upon the exercise of options within 60 days of March 31, 2020.
- (9) Consisting of 36,455 shares of common stock that can be acquired upon the exercise of options within 60 days of March 31, 2020.

- (10) Consisting of 11,267 shares of common stock that can be acquired upon the exercise of options within 60 days of March 31, 2020.
- (11) Consisting of 4,167 shares of common stock that can be acquired upon the exercise of options within 60 days of March 31, 2020.
- (12) Consisting of 3,887 shares of common stock and 14,627 shares of common stock that can be acquired upon the exercise of options within 60 days of March 31, 2020.
- (13) Consisting of 10,625 shares of common stock that can be acquired upon the exercise of options within 60 days of March 31, 2020.
- (14) Consisting of 10,636 shares of common stock that can be acquired upon the exercise of options within 60 days of March 31, 2020.
- (15) Consisting of 8,750 shares of common stock that can be acquired upon the exercise of options within 60 days of March 31, 2020.
- (16) Dr. Schwab became a member of the Board of Directors effective on February 14, 2020, and as such none of her options have vested yet.
- (17) Consisting of 20,678 shares of common stock and 17,984 shares of common stock that can be acquired upon the exercise of options within 60 days of March 31, 2020.
- (18) Consisting of 59,323 shares of common stock and 517,738 shares of common stock that can be acquired upon the exercise of options within 60 days of March 31, 2020.

CERTAIN RELATIONSHIPS AND RELATED PERSON TRANSACTIONS

The following is a description of transactions since January 2018, to which we have been a party, in which the amount involved exceeded or will exceed \$120,000, and in which any related person had a direct or indirect material interest.

Indemnification Agreements

We entered into indemnification agreements with each of our directors and executive officers. These agreements will require us to indemnify these individuals and, in certain cases, affiliates of such individuals, to the fullest extent permissible under Delaware law against liabilities that may arise by reason of their service to us or at our direction, and to advance expenses incurred as a result of any proceeding against them as to which they could be indemnified.

Registration Rights Agreement

We are a party to a registration rights agreement with certain holders of common stock, including some of our directors, executive officers and 5% stockholders and their affiliates and entities affiliated with our directors. The registration rights agreement provides these holders the right to demand that we file a registration statement or request that their shares be covered by a registration statement that we are otherwise filing.

Transactions with Our Executive Officers, Directors and 5% Stockholders

In connection with our January 2018 equity financing, we agreed to elect one representative from New Enterprise Associates, or NEA, to serve as a member of our Board of Directors. NEA was a lead investor in equity financings in January 2018, February 2019, and June 2019, and beneficially owns approximately 30% of our common stock as of March 31, 2020. In February 2018, the Board of Directors elected Ali Behbahani, a partner in the healthcare group at NEA, as a director of the Company. We do not have any obligation to continue to nominate NEA's representative on our Board of Directors.

Related Person Transactions Policy

Pursuant to our written related person transaction approval policy, if we want to enter into a transaction with a related person or an affiliate of a related person, our Chief Financial Officer will review the proposed transaction to determine, based on applicable Nasdaq and SEC rules, if such transaction requires pre-approval by the Audit Committee and/or Board of Directors. If pre-approval is required, such matters will be reviewed at the next regular or special Audit Committee and/or Board of Directors meeting. We may not enter into a related person transaction unless our Chief Financial Officer has either specifically confirmed in writing that no further reviews are necessary or that all requisite corporate reviews have been obtained.

Transactions with related persons

If a related person proposes to enter into such a transaction, arrangement or relationship, which we refer to as a "related person transaction," the related person must report the proposed related person transaction to our Chief Financial Officer. The policy calls for the proposed related person transaction to be reviewed and, if deemed appropriate, approved by our Audit Committee. Whenever practicable, the reporting, review and approval will occur prior to entry into the transaction. If advance review and approval is not practicable, the Audit Committee will review, and, in its discretion, may ratify the related person transaction. The policy also permits the chair of the Audit Committee to review and, if deemed appropriate, approve proposed related person transactions, in which the amount involved does not exceed \$500,000, that arise between Audit Committee meetings, subject to ratification by the Audit Committee at its next meeting. Any related person transactions that are ongoing in nature will be reviewed annually.

A related person transaction reviewed under the policy will be considered approved or ratified if it is authorized by the Audit Committee after full disclosure of the related person's interest in the transaction.

In addition to the transactions that are excluded by the instructions to the SEC's related person transaction disclosure rule, our Board of Directors has determined that the following transactions are pre-approved by the Audit Committee even if the aggregate amount of such transaction exceeds \$120,000:

- employment of executive officers where the related compensation is required to be reported in a proxy statement (general applicable to "named executive officers") or the executive officer is not an immediate family member of another executive officer or director, the related compensation would be reported as compensation in a proxy statement and the Compensation Committee approved (or recommended that the Board of Directors approve) such compensation;

- any compensation paid to a director if the compensation is required to be reported in a proxy statement;
- any transaction with another company at which a related person's only relationship is an employee (other than an executive officer), director of beneficial owner of less than 10% of that company's shares, if the aggregate amount involved does not exceed the greater of \$1 million or 2% of that company's total annual revenues;
- any transaction where our Company is indebted to another company at which a related person's only relationship is an employee (other than an executive officer), director of beneficial owner of less than 10% of that company's shares, if the total amount of our Company's indebtedness to the other company at the end of that company's last completed fiscal year does not exceed 1% of that company's total consolidated assets;
- any transaction where the related person's interest arises solely from the ownership of our Company's common stock and all holders of our Company's common stock received the same benefit on a pro rata basis;
- any transaction involving a related person where the rates or charges involved are determined by competitive bids;
- any transaction with a related person involving the rendering of services as common or contract carrier, or public utility, at rates or charges fixed in conformity with law or governmental authority; or
- any transaction with a related person involving services as a bank depository of funds, transfer agent, registrar, trustee under a trust indenture, or similar services.

GENERAL MATTERS

Code of Business Conduct and Ethics and Corporate Governance Guidelines

We have adopted a Code of Business Conduct and Ethics for our directors, officers and employees. A copy of the Code of Business Conduct and Ethics may be accessed free of charge by visiting our website at <http://ir.genocoea.com/> and going to the "Investor Relations—Governance" section or by requesting a copy in writing from Diantha Duvall, Secretary, at our Cambridge, Massachusetts office. We intend to post on our website amendments to, or waivers under, a provision of the Code of Business Conduct and Ethics that apply to certain of our executive officers within four business days following the date of such amendment or waiver.

A copy of the Corporate Governance Guidelines may also be accessed free of charge by visiting the website at <http://ir.genocoea.com/> and going to the "Investors Relations—Governance" section or by requesting a copy in writing from Diantha Duvall, Secretary, at our Cambridge, Massachusetts office.

Availability of Certain Documents

A copy of our 2019 Annual Report has been posted on the Internet along with this Proxy Statement. We will mail without charge, upon written or oral request, a copy of our 2019 Annual Report excluding exhibits. Please contact our Corporate Secretary, at 617-876-8191 or send a written request to our Corporate Secretary at:

Genocoea Biosciences, Inc.
100 Acorn Park Drive

Cambridge, MA 02140

Attention: Secretary

Only one copy of this Proxy Statement is being delivered to multiple stockholders sharing an address, unless we have received contrary instructions from one or more of the stockholders. We will undertake to deliver promptly, upon written or oral request, a separate copy to a stockholder at a shared address to which a single copy of the Proxy Statement was delivered. You may make a written or oral request by sending a written notification to our Secretary at the address above, providing your name, your shared address, and the address to which we should direct the additional copy of the Proxy Statement. Multiple stockholders sharing an address who have received one copy of the Proxy Statement and would prefer us to mail each stockholder a separate copy of future mailings should contact us at our principal executive offices. Additionally, if current stockholders with a shared address received multiple copies of the Proxy Statement and would prefer us to mail one copy of future mailings to stockholders at the shared address, notification of that request may also be made through our principal executive offices.

Stockholder Proposals and Nominations

Requirements for Stockholder Proposals to be Considered for Inclusion in our Proxy Materials. To be considered for inclusion in next year's Proxy Statement, stockholder proposals pursuant to Rule 14a-8 under the Exchange Act must be received by our Secretary at Genocoea Biosciences, Inc., 100 Acorn Park Drive, Cambridge, MA 02140 no later than 120 days prior to April 20, 2021.

Requirements for Stockholder Proposals or Director Nominations to be Brought Before an Annual Meeting. Our amended and restated by-laws provide that, for stockholder nominations to the Board of Directors or other proposals to be considered at an annual meeting, the stockholder must have given timely notice thereof in writing to the Secretary at Genocoea Biosciences, Inc., 100 Acorn Park Drive, Cambridge, MA 02140. To be timely for the 2021 annual meeting, the stockholder's notice must be delivered to or mailed and received by us not more than 120 days, and not less than 90 days, before the anniversary date of the preceding annual meeting, except that if there was no annual meeting in the prior year or if the current year's annual meeting is more than 30 days before or after the anniversary date of the previous year's annual meeting, we must receive the notice not later than the close of business on the tenth day following the day on which we provide notice or public disclosure of the date of the meeting. Such notice must provide the information required by our by-laws with respect to each matter the stockholder proposes to bring before the 2021 annual meeting.

Communications with the Board of Directors

A stockholder may send general communications to our Board of Directors, any committee of our Board of Directors or any individual director by directing such communication to our Corporate Secretary at:

Genocea Biosciences, Inc.
100 Acorn Park Drive
Cambridge, Massachusetts 02140
Attention: Secretary

The communication must prominently display the legend "BOARD COMMUNICATION" in order to indicate to the Secretary that it is a communication for the Board of Directors. Upon receiving such a communication, the Secretary will promptly forward the communication to the relevant individual or group to which it is addressed. Certain items that are unrelated to the Board of Directors' duties and responsibilities may be excluded, such as spam, junk mail and mass mailings, resumes and other forms of job inquiries, surveys and business solicitations or advertisements. The Secretary will not forward any communication determined in his good faith belief to be frivolous, unduly hostile, threatening, illegal or similarly unsuitable.

Other Matters

As of the date of this Proxy Statement, the Board of Directors does not intend to present any matters other than those described herein at the Annual Meeting and is unaware of any matters to be presented by other parties. If other matters are properly brought before the Annual Meeting for action by the stockholders, proxies will be voted in accordance with the recommendation of the Board of Directors or, in the absence of such a recommendation, in accordance with the judgment of the proxy holder.

By Order of the Board of Directors



William Clark
President and Chief Executive Officer
April 20, 2020

**CERTIFICATE OF AMENDMENT
TO THE
RESTATED CERTIFICATE OF INCORPORATION
OF
GENOCEA BIOSCIENCES, INC.**

Genocea Biosciences, Inc., a corporation organized and existing under the General Corporation Law of the State of Delaware (the "Corporation"), DOES HEREBY CERTIFY:

- FIRST: The Certificate of Incorporation of the Corporation was filed with the Secretary of State of Delaware on August 16, 2006 under the name "Genocea, Inc."
- SECOND: The Certificate of Incorporation was amended and restated on December 21, 2006, on February 10, 2009, on December 17, 2010 and on September 27, 2012, and was amended on September 30, 2013, January 21, 2014, February 10, 2014, and June 21, 2018. The Certificate of Incorporation was most recently amended on May 22, 2019 (the "Amended and Restated Certificate of Incorporation").
- THIRD: This Certificate of Amendment further amends the Restated Certificate of Incorporation and has been duly adopted in accordance with the provisions of Sections 228 and 242 of the General Corporation Law of the State of Delaware by the directors and stockholders of the Corporation.
- FOURTH: The Restated Certificate of Incorporation is hereby amended by deleting subsection (a) of Article IV "Capital Stock" in its entirety and replacing it as following in lieu thereof:

"The total number of shares of stock which the Corporation shall have authority to issue is 195,000,000, consisting of 170,000,000 shares of common stock, par value \$0.001 per share ("Common Stock"), and 25,000,000 shares of preferred stock, par value \$0.001 per share ("Preferred Stock"). Such stock may be issued from time to time by the Corporation for such consideration as may be fixed by the board of directors of the Corporation (the "Board of Directors")."

IN WITNESS WHEREOF, the Corporation has caused this Certificate of Amendment to be signed by its duly authorized officer this ____ day of _____, 2020.

By: _____
Name:
Title:

GENOCEA BIOSCIENCES, INC.
AMENDED AND RESTATED 2014 EQUITY INCENTIVE PLAN

1. DEFINED TERMS

Exhibit A, which is incorporated by reference, defines the terms used in the Plan and sets forth certain operational rules related to those terms.

2. PURPOSE

The Plan has been established to advance the interests of the Company by providing for the grant to Participants of Stock-based Awards.

3. ADMINISTRATION

The Administrator has discretionary authority, subject only to the express provisions of the Plan, to interpret the Plan; determine eligibility for and grant Awards; determine, modify or waive the terms and conditions of any Award; determine the form of settlement of Awards (whether in cash, shares of Stock or other property); prescribe forms, rules and procedures relating to the Plan; and otherwise do all things necessary or appropriate to carry out the purposes of the Plan. Determinations of the Administrator made under the Plan will be conclusive and will bind all parties.

4. LIMITS ON AWARDS UNDER THE PLAN

(a) **Number of Shares.** The maximum number of shares of Stock that may be delivered in satisfaction of Awards under the Plan is 2,541,695 shares (the "Share Pool"), of which 1,251,635 shares remained available for future Awards as of March 31, 2020 (subject to stockholder approval of 2,800,000 shares at the 2020 annual meeting of the Company's stockholders), together with any shares of Stock that again become available pursuant to this Section 4(a)). The Share Pool shall automatically increase annually on each January 1st, from January 1, 2015 through January 1, 2024, in an amount equal to four percent (4%) of the number of shares of Stock outstanding as of the close of business on the immediately preceding December 31st. Notwithstanding the foregoing, the Board may act prior to January 1st of a given year to provide that there will be no January 1st increase in the Share Pool for such year or that the increase in the Share Pool for such year will be a lesser number of shares of Stock than would otherwise occur pursuant to the preceding sentence. Notwithstanding the preceding sentences, no more than 1,125,000 shares of Stock may be delivered in satisfaction of ISOs awarded under the Plan. Nothing in this Section 4(a) will be construed as requiring that any, or any fixed number of, ISOs be awarded under the Plan. The limits set forth in this Section 4(a) shall be construed to comply with Section 422 of the Code. For purposes of this Section 4(a), the number of shares of Stock delivered in satisfaction of Awards will be determined net of shares of Stock withheld by the Company in payment of the exercise price of the Award or in satisfaction of tax withholding requirements with respect to the Award and, for the avoidance of doubt, without including any shares of Stock underlying Awards settled in cash or that otherwise expire or become unexercisable without having been exercised or that are forfeited to or repurchased by the Company due to failure to vest. To the extent consistent with the requirements of Section 422 and the regulations thereunder, and with other applicable legal requirements (including applicable stock exchange requirements), Stock issued under awards of an acquired company that are converted, replaced or adjusted in connection with the acquisition shall not reduce the number of shares of Stock available for Awards under the Plan.

(b) **Type of Shares.** Stock delivered by the Company under the Plan may be authorized but unissued Stock or previously issued Stock acquired by the Company. No fractional shares of Stock will be delivered under the Plan.

(c) Notwithstanding any other provision of the Plan to the contrary, including subsection (c) above, a Participant who is a non-employee Director may not receive Awards in any calendar year with respect to the lesser of (i) 50,000 shares or (ii) that number of shares having an aggregate grant date fair value (computed as of the date of grant in accordance with applicable financial accounting rules) of no more than \$1,000,000. The foregoing limits shall not apply to any Award or shares of Stock granted pursuant to a Director's election to receive shares of Stock in lieu of cash fees.

5. ELIGIBILITY AND PARTICIPATION

The Administrator will select Participants from among key Employees and Directors of, and consultants and advisors to, the Company and its Affiliates who are in a position to contribute significantly to the success of the Company and its Affiliates. Eligibility for ISOs is limited to individuals described in the first sentence of this Section 5 who are employees of the Company or of a “parent corporation” or “subsidiary corporation” of the Company as those terms are defined in Section 424 of the Code. Eligibility for Stock Options other than ISOs is limited to individuals described in the first sentence of this Section 5 who are providing direct services on the date of grant of the Stock Option to the Company or to a subsidiary of the Company that would be described in the first sentence of Treas. Regs. §1.409A-1(b)(5)(iii)(E).

6. RULES APPLICABLE TO AWARDS

(a) All Awards.

(1) **Award Provisions.** The Administrator will determine the terms of all Awards, subject to the limitations provided herein. By accepting (or, under such rules as the Administrator may prescribe, being deemed to have accepted) an Award, the Participant will be deemed to have agreed to the terms of the Award and the Plan. Notwithstanding any provision of this Plan to the contrary, awards of an acquired company that are converted, replaced or adjusted in connection with the acquisition may contain terms and conditions that are inconsistent with the terms and conditions specified herein, as determined by the Administrator.

(2) **Term of Plan.** No Awards may be made after ten years from the Date of Adoption, but previously granted Awards may continue beyond that date in accordance with their terms.

(3) **Transferability.** Neither ISOs nor, except as the Administrator otherwise expressly provides in accordance with the third sentence of this Section 6(a)(3), other Awards may be transferred other than by will or by the laws of descent and distribution. During a Participant’s lifetime, ISOs (and, except as the Administrator otherwise expressly provides in accordance with the third sentence of this Section 6(a)(3), SARs and NSOs) may be exercised only by the Participant. The Administrator may permit the gratuitous transfer (*i.e.*, transfer not for value) of Awards other than ISOs, subject to such limitations as the Administrator may impose.

(4) **Vesting, etc.** The Administrator will determine the time or times at which an Award will vest or become exercisable and the terms on which a Stock Option or SAR will remain exercisable. Without limiting the foregoing, the Administrator may at any time accelerate the vesting or exercisability of an Award, regardless of any adverse or potentially adverse tax or other consequences resulting from such acceleration. Unless the Administrator expressly provides otherwise, however, the following rules will apply if a Participant’s Employment ceases:

(A) Immediately upon the cessation of the Participant’s Employment and except as provided in (B) and (C) below, each Stock Option and SAR that is then held by the Participant or by the Participant’s permitted transferees, if any, will cease to be exercisable and will terminate and all other Awards that are then held by the Participant or by the Participant’s permitted transferees, if any, to the extent not already vested will be forfeited.

(B) Subject to (C) and (D) below, all Stock Options and SARs held by the Participant or the Participant’s permitted transferees, if any, immediately prior to the cessation of the Participant’s Employment, to the extent then exercisable, will remain exercisable for the lesser of (i) a period of three months or (ii) the period ending on the latest date on which such Stock Option or SAR could have been exercised without regard to this Section 6(a)(4), and will thereupon immediately terminate.

(C) All Stock Options and SARs held by a Participant or the Participant’s permitted transferees, if any, immediately prior to the cessation of the Participant’s Employment due to his or her death, to the extent then exercisable, will remain exercisable for the lesser of (i) a period of twelve (12) months or (ii) the period ending on the latest date on which such Stock Option or SAR could have been exercised without regard to this Section 6(a)(4), and will thereupon immediately terminate.

(D) All Stock Options and SARs (whether or not exercisable) held by a Participant or the Participant’s permitted transferees, if any, immediately prior to the cessation of the Participant’s Employment will immediately terminate upon such cessation of Employment if the termination is for Cause or occurs in circumstances that in the sole determination of the Administrator would have constituted grounds for the Participant’s Employment to be terminated for Cause.

(5) **Additional Restrictions.** The Administrator may cancel, rescind, withhold or otherwise limit or restrict any Award at any time if the Participant is not in compliance with all applicable provisions of the Award agreement and the Plan, or if the Participant breaches any agreement with the Company or its Affiliates with respect to non-competition, non-solicitation or confidentiality. Without limiting the generality of the foregoing, the Administrator may recover Awards made under the Plan and payments under or gain in respect of any Award in accordance with any applicable Company clawback or recoupment policy,

as such policy may be amended and in effect from time to time, or as otherwise required by applicable law or applicable stock exchange listing standards, including, without limitation, Section 10D of the Securities Exchange Act of 1934, as amended.

(6) **Taxes.** The delivery, vesting and retention of Stock, cash or other property under an Award are conditioned upon full satisfaction by the Participant of all tax withholding requirements with respect to the Award. The Administrator will prescribe such rules for the withholding of taxes as it deems necessary. The Administrator may, but need not, hold back shares of Stock from an Award or permit a Participant to tender previously owned shares of Stock in satisfaction of tax withholding requirements (but not in excess of the minimum withholding required by law).

(7) **Dividend Equivalents, Etc.** The Administrator may provide for the payment of amounts (on terms and subject to conditions established by the Administrator) in lieu of cash dividends or other cash distributions with respect to Stock subject to an Award whether or not the holder of such Award is otherwise entitled to share in the actual dividend or distribution in respect of such Award. Any entitlement to dividend equivalents or similar entitlements will be established and administered either consistent with an exemption from, or in compliance with, the requirements of Section 409A. Dividends or dividend equivalent amounts payable in respect of Awards that are subject to restrictions may be subject to such limits or restrictions as the Administrator may impose.

(8) **Rights Limited.** Nothing in the Plan will be construed as giving any person the right to continued employment or service with the Company or its Affiliates, or any rights as a stockholder except as to shares of Stock actually issued under the Plan. The loss of existing or potential profit in Awards will not constitute an element of damages in the event of a termination of Employment for any reason, even if the termination is in violation of an obligation of the Company or any Affiliate to the Participant.

(9) **Section 162(m).** In the case of any Performance Award (other than a Stock Option or SAR) intended to qualify for the performance-based compensation exception under Section 162(m), the Administrator will establish the applicable Performance Criterion or Criteria in writing no later than ninety (90) days after the commencement of the period of service to which the performance relates (or at such earlier time as is required to qualify the Award as performance-based under Section 162(m)) and, prior to the event or occurrence (grant, vesting or payment, as the case may be) that is conditioned on the attainment of such Performance Criterion or Criteria, will certify whether it or they have been attained. The preceding sentence will not apply to an Award eligible (as determined by the Administrator) for exemption from the limitations of Section 162(m) by reason of the post-initial public offering transition relief in Section 1.162-27(f) of the Treasury Regulations.

(10) **Coordination with Other Plans.** Awards under the Plan may be granted in tandem with, or in satisfaction of or substitution for, other Awards under the Plan or awards made under other compensatory plans or programs of the Company or its Affiliates. For example, but without limiting the generality of the foregoing, awards under other compensatory plans or programs of the Company or its Affiliates may be settled in Stock (including, without limitation, Unrestricted Stock) if the Administrator so determines, in which case the shares delivered will be treated as awarded under the Plan (and will reduce the number of shares thereafter available under the Plan in accordance with the rules set forth in Section 4). In any case where an award is made under another plan or program of the Company or its Affiliates and such award is intended to qualify for the performance-based compensation exception under Section 162(m), and such award is settled by the delivery of Stock or another Award under the Plan, the applicable Section 162(m) limitations under both the other plan or program and under the Plan will be applied to the Plan as necessary (as determined by the Administrator) to preserve the availability of the Section 162(m) performance-based compensation exception with respect thereto.

(11) **Section 409A.** Each Award will contain such terms as the Administrator determines, and will be construed and administered, such that the Award either qualifies for an exemption from the requirements of Section 409A or satisfies such requirements.

(12) **Fair Market Value.** In determining the fair market value of any share of Stock under the Plan, the Administrator will make the determination in good faith consistent with the rules of Section 422 and Section 409A to the extent applicable.

(b) Stock Options and SARs.

(1) **Time And Manner Of Exercise.** Unless the Administrator expressly provides otherwise, no Stock Option or SAR will be deemed to have been exercised until the Administrator receives a notice of exercise (in form acceptable to the Administrator), which may be an electronic notice, signed (including electronic signature in form acceptable to the Administrator) by the appropriate person and accompanied by any payment required under the Award. A Stock Option or SAR exercised by any

person other than the Participant will not be deemed to have been exercised until the Administrator has received such evidence as it may require that the person exercising the Award has the right to do so.

(2) **Exercise Price.** The exercise price (or the base value from which appreciation is to be measured) of each Award requiring exercise will be no less than 100% (or in the case of an ISO granted to a ten-percent shareholder within the meaning of subsection (b)(6) of Section 422, 110%) of the fair market value of the Stock subject to the Award, determined as of the date of grant, or such higher amount as the Administrator may determine in connection with the grant. Except in connection with a corporate transaction involving the Company (which term shall include, without limitation, any stock dividend, stock split, extraordinary cash dividend, recapitalization, reorganization, merger, consolidation, split-up, spin-off, combination, or exchange of shares) or as otherwise contemplated by Section 7 of the Plan, the terms of outstanding Stock Options or SARs, as applicable, may not be amended to reduce the exercise prices of such Stock Options or the base values from which appreciation under such SARs are to be measured other than in accordance with the stockholder approval requirements of the NASDAQ Global Market.

(3) **Payment Of Exercise Price.** Where the exercise of an Award is to be accompanied by payment, payment of the exercise price will be by cash or check acceptable to the Administrator or by such other legally permissible means, if any, as may be acceptable to the Administrator.

(4) **Maximum Term.** Stock Options and SARs will have a maximum term not to exceed ten (10) years from the date of grant (or five (5) years from the date of grant in the case of an ISO granted to a ten-percent shareholder described in Section 6(b)(2) above); provided, however, that, if a Participant still holding an outstanding but unexercised NSO or SAR ten (10) years from the date of grant (or, in the case of an NSO or SAR with a maximum term of less than ten (10) years, such maximum term) is prohibited by applicable law or a written policy of the Company applicable to similarly situated employees from engaging in any open-market sales of Stock, and if at such time the Stock is publicly traded (as determined by the Administrator), the maximum term of such Award will instead be deemed to expire on the thirtieth (30th) day following the date the Participant is no longer prohibited from engaging in such open market sales.

7. EFFECT OF CERTAIN TRANSACTIONS

(a) **Mergers, etc.** Except as otherwise provided in an Award agreement, the following provisions will apply in the event of a Covered Transaction:

(1) **Assumption or Substitution.** If the Covered Transaction is one in which there is an acquiring or surviving entity, the Administrator may (but, for the avoidance of doubt, need not) provide (i) for the assumption or continuation of some or all outstanding Awards or any portion thereof or (ii) for the grant of new awards in substitution therefor by the acquiror or survivor or an affiliate of the acquiror or survivor.

(2) **Cash-Out of Awards.** Subject to Section 7(a)(5) below the Administrator may (but, for the avoidance of doubt, need not) provide for payment (a "cash-out"), with respect to some or all Awards or any portion thereof, equal in the case of each affected Award or portion thereof to the excess, if any, of (A) the fair market value of one share of Stock (as determined by the Administrator in its reasonable discretion) times the number of shares of Stock subject to the Award or such portion, over (B) the aggregate exercise or purchase price, if any, under the Award or such portion (in the case of an SAR, the aggregate base value above which appreciation is measured), in each case on such payment terms (which need not be the same as the terms of payment to holders of Stock) and other terms, and subject to such conditions, as the Administrator determines, it being understood that if the exercise or purchase price (or base value) of an Award is equal to or greater than the fair market value of one share of Stock, the Award may be cancelled with no payment due hereunder.

(3) **Acceleration of Certain Awards.** Subject to Section 7(a)(5) below, the Administrator may (but, for the avoidance of doubt, need not) provide that any Award requiring exercise will become exercisable, in full or in part and/or that the delivery of any shares of Stock remaining deliverable under any outstanding Award of Stock Units (including Restricted Stock Units and Performance Awards to the extent consisting of Stock Units) will be accelerated in full or in part, in each case on a basis that gives the holder of the Award a reasonable opportunity, as determined by the Administrator, following exercise of the Award or the delivery of the shares, as the case may be, to participate as a stockholder in the Covered Transaction.

(4) **Termination of Awards Upon Consummation of Covered Transaction.** Except as the Administrator may otherwise determine in any case, each Award will automatically terminate (and in the case of outstanding shares of Restricted Stock, will automatically be forfeited) upon consummation of the Covered Transaction, other than Awards assumed pursuant to Section 7(a)(1) above.

(5) **Additional Limitations.** Any share of Stock and any cash or other property delivered pursuant to Section 7(a)(2) or Section 7(a)(3) above with respect to an Award may, in the discretion of the Administrator, contain such restrictions, if any, as the Administrator deems appropriate to reflect any performance or other vesting conditions to which the Award was subject and that did not lapse (and were not satisfied) in connection with the Covered Transaction. For purposes of the immediately preceding sentence, a cash-out under Section 7(a)(2) above or acceleration under Section 7(a)(3) above will not, in and of itself, be treated as the lapsing (or satisfaction) of a performance or other vesting condition. In the case of Restricted Stock that does not vest and is not forfeited in connection with the Covered Transaction, the Administrator may require that any amounts delivered, exchanged or otherwise paid in respect of such Stock in connection with the Covered Transaction be placed in escrow or otherwise made subject to such restrictions as the Administrator deems appropriate to carry out the intent of the Plan.

(b) Changes in and Distributions With Respect to Stock.

(1) **Basic Adjustment Provisions.** In the event of a stock dividend, stock split or combination of shares (including a reverse stock split), recapitalization or other change in the Company's capital structure that constitutes an equity restructuring within the meaning of FASB ASC 718, the Administrator will make appropriate adjustments to the Share Pool, to the maximum number of shares of Stock that may be delivered in satisfaction of ISOs under the Plan, and to the maximum share limit described in Section 4(c), and will also make appropriate adjustments to the number and kind of shares of stock or securities subject to Awards then outstanding or subsequently granted, any exercise or purchase prices (or base values) relating to Awards and any other provision of Awards affected by such change.

(2) **Certain Other Adjustments.** The Administrator may also make adjustments of the type described in Section 7(b)(1) above to take into account distributions to stockholders other than those provided for in Section 7(a) and 7(b)(1), or any other event, if the Administrator determines that adjustments are appropriate to avoid distortion in the operation of the Plan, having due regard for the qualification of ISOs under Section 422, the requirements of Section 409A, and for the performance-based compensation rules of Section 162(m), where applicable.

(3) **Continuing Application of Plan Terms.** References in the Plan to shares of Stock will be construed to include any stock or securities resulting from an adjustment pursuant to this Section 7.

8. LEGAL CONDITIONS ON DELIVERY OF STOCK

The Company will not be obligated to deliver any shares of Stock pursuant to the Plan or to remove any restriction from shares of Stock previously delivered under the Plan until: (i) the Company is satisfied that all legal matters in connection with the issuance and delivery of such shares have been addressed and resolved; (ii) if the outstanding Stock is at the time of delivery listed on any stock exchange or national market system, the shares to be delivered have been listed or authorized to be listed on such exchange or system upon official notice of issuance; and (iii) all conditions of the Award have been satisfied or waived. The Company may require, as a condition to exercise of the Award, such representations or agreements as counsel for the Company may consider appropriate to avoid violation of the Securities Act of 1933, as amended, or any applicable state or non-U.S. securities law. Any Stock required to be issued to Participants under the Plan will be evidenced in such manner as the Administrator may deem appropriate, including book-entry registration or delivery of stock certificates. In the event that the Administrator determines that Stock certificates will be issued to Participants under the Plan, the Administrator may require that certificates evidencing Stock issued under the Plan bear an appropriate legend reflecting any restriction on transfer applicable to such Stock, and the Company may hold the certificates pending lapse of the applicable restrictions.

9. AMENDMENT AND TERMINATION

The Administrator may at any time or times amend the Plan or any outstanding Award for any purpose which may at the time be permitted by law, and may at any time terminate the Plan as to any future grants of Awards; provided, that, except as otherwise expressly provided in the Plan, the Administrator may not, without the Participant's consent, alter the terms of an Award so as to affect materially and adversely the Participant's rights under the Award, unless the Administrator expressly reserved the right to do so at the time the Award was granted. Any amendments to the Plan will be conditioned upon stockholder approval only to the extent, if any, such approval is required by law (including the Code and applicable stock exchange requirements), as determined by the Administrator.

10. OTHER COMPENSATION ARRANGEMENTS

The existence of the Plan or the grant of any Award will not in any way affect the Company's right to Award a person bonuses or other compensation in addition to Awards under the Plan.

11. MISCELLANEOUS

(a) **Waiver of Jury Trial.** By accepting an Award under the Plan, each Participant waives any right to a trial by jury in any action, proceeding or counterclaim concerning any rights under the Plan and any Award, or under any amendment, waiver, consent, instrument, document or other agreement delivered or which in the future may be delivered in connection therewith, and agrees that any such action, proceedings or counterclaim will be tried before a court and not before a jury. By accepting an Award under the Plan, each Participant certifies that no officer, representative, or attorney of the Company has represented, expressly or otherwise, that the Company would not, in the event of any action, proceeding or counterclaim, seek to enforce the foregoing waivers. Notwithstanding anything to the contrary in the Plan, nothing herein is to be construed as limiting the ability of the Company and a Participant to agree to submit disputes arising under the terms of the Plan or any Award made hereunder to binding arbitration or as limiting the ability of the Company to require any eligible individual to agree to submit such disputes to binding arbitration as a condition of receiving an Award hereunder.

(b) **Limitation of Liability.** Notwithstanding anything to the contrary in the Plan, neither the Company, nor any Affiliate, nor the Administrator, nor any person acting on behalf of the Company, any Affiliate, or the Administrator, will be liable to any Participant or to the estate or beneficiary of any Participant or to any other holder of an Award by reason of any acceleration of income, or any additional tax (including any interest and penalties), asserted by reason of the failure of an Award to satisfy the requirements of Section 422 or Section 409A or by reason of Section 4999 of the Code, or otherwise asserted with respect to the Award; provided, that nothing in this Section 11(b) will limit the ability of the Administrator or the Company, in its discretion, to provide by separate express written agreement with a Participant for any payment in connection with any such acceleration of income or additional tax.

12. ESTABLISHMENT OF SUB-PLANS

The Administrator may from time to time establish one or more sub-plans under the Plan for purposes of satisfying applicable blue sky, securities or tax laws of various jurisdictions. The Administrator will establish such sub-plans by adopting supplements to the Plan setting forth (i) such limitations on the Administrator's discretion under the Plan as it deems necessary or desirable and (ii) such additional terms and conditions not otherwise inconsistent with the Plan as it deems necessary or desirable. All supplements so established will be deemed to be part of the Plan, but each supplement will apply only to Participants within the affected jurisdiction (as determined by the Administrator).

13. GOVERNING LAW

(a) **Certain Requirements of Corporate Law.** Awards will be granted and administered consistent with the requirements of applicable Delaware law relating to the issuance of stock and the consideration to be received therefor, and with the applicable requirements of the stock exchanges or other trading systems on which the Stock is listed or entered for trading, in each case as determined by the Administrator.

(b) **Other Matters.** Except as otherwise provided by the express terms of an Award agreement, under a sub-plan described in Section 12 or as provided in Section 13(a) above, the provisions of the Plan and of Awards under the Plan and all claims or disputes arising out of or based upon the Plan or any Award under the Plan or relating to the subject matter hereof or thereof will be governed by and construed in accordance with the domestic substantive laws of the State of Massachusetts without giving effect to any choice or conflict of laws provision or rule that would cause the application of the domestic substantive laws of any other jurisdiction.

(c) **Jurisdiction.** By accepting an Award, each Participant will be deemed to (a) have submitted irrevocably and unconditionally to the jurisdiction of the federal and state courts located within the geographic boundaries of the United States District Court for the District of Massachusetts for the purpose of any suit, action or other proceeding arising out of or based upon the Plan or any Award; (b) agree not to commence any suit, action or other proceeding arising out of or based upon the Plan or an Award, except in the federal and state courts located within the geographic boundaries of the United States District Court for the District of Massachusetts; and (c) waive, and agree not to assert, by way of motion as a defense or otherwise, in any such suit, action or proceeding, any claim that it is not subject personally to the jurisdiction of the above-named courts that its property is exempt or immune from attachment or execution, that the suit, action or proceeding is brought in an inconvenient forum, that the venue of the suit, action or proceeding is improper or that the Plan or an Award or the subject matter thereof may not be enforced in or by such court.

EXHIBIT A
Definition of Terms

The following terms, when used in the Plan, will have the meanings and be subject to the provisions set forth below:

“Administrator”: The Compensation Committee, except that the Compensation Committee may delegate (i) to one or more of its members (or one or more other members of the Board (including the full Board)) such of its duties, powers and responsibilities as it may determine; (ii) to one or more officers of the Company the power to grant Awards to the extent permitted by Section 157(c) of the Delaware General Corporation Law; and (iii) to such Employees or other persons as it determines such ministerial tasks as it deems appropriate. In the event of any delegation described in the preceding sentence, the term “Administrator” will include the person or persons so delegated to the extent of such delegation.

“Affiliate”: Any corporation or other entity that stands in a relationship to the Company that would result in the Company and such corporation or other entity being treated as one employer under Section 414(b) and Section 414(c) of the Code.

“Award”: Any or a combination of the following:

- (i) Stock Options.
- (ii) SARs.
- (iii) Restricted Stock.
- (iv) Unrestricted Stock.
- (v) Stock Units, including Restricted Stock Units.
- (vi) Performance Awards.
- (vii) Awards (other than Awards described in (i) through (vi) above) that are convertible into or otherwise based on Stock.

“Board”: The Board of Directors of the Company.

“Cause”: In the case of any Participant who is party to an employment or severance-benefit agreement that contains a definition of “Cause,” the definition set forth in such agreement will apply with respect to such Participant under the Plan for so long as such agreement is in effect. In the case of any other Participant, “Cause” will mean, as determined by the Administrator in its reasonable judgment, (i) a substantial failure of the Participant to perform the Participant’s duties and responsibilities to the Company or subsidiaries or substantial negligence in the performance of such duties and responsibilities; (ii) the commission by the Participant of a felony or a crime involving moral turpitude; (iii) the commission by the Participant of theft, fraud, embezzlement, material breach of trust or any material act of dishonesty involving the Company or any of its subsidiaries; (iv) a significant violation by the Participant of the code of conduct of the Company or its subsidiaries of any material policy of the Company or its subsidiaries, or of any statutory or common law duty of loyalty to the Company or its subsidiaries; (v) material breach of any of the terms of the Plan or any Award made under the Plan, or of the terms of any other agreement between the Company or subsidiaries and the Participant; or (vi) other conduct by the Participant that could reasonably be expected to be harmful to the business, interests or reputation of the Company.

“Code”: The U.S. Internal Revenue Code of 1986 as from time to time amended and in effect, or any successor statute as from time to time in effect.

“Compensation Committee”: The Compensation Committee of the Board.

“Company”: Genoece Biosciences, Inc.

“Covered Transaction”: Any of (i) a consolidation, merger, or similar transaction or series of related transactions, including a sale or other disposition of stock, in which the Company is not the surviving corporation or that results in the acquisition of all or substantially all of the Company’s then outstanding common stock by a single person or entity or by a group of persons and/or entities acting in concert, (ii) a sale or transfer of all or substantially all the Company’s assets, or (iii) a dissolution or liquidation of the Company. Where a Covered Transaction involves a tender offer that is reasonably expected to be followed by a merger described in clause (i) (as determined by the Administrator), the Covered Transaction will be deemed to have occurred upon consummation of the tender offer.

“Date of Adoption”: January 20, 2014.

“Director”: A member of the Board.

“Employee”: Any person who is employed by the Company or an Affiliate.

“Employment”: A Participant’s employment or other service relationship with the Company and its Affiliates. Employment will be deemed to continue, unless the Administrator expressly provides otherwise, so long as the Participant is employed by, or otherwise is providing services in a capacity described in Section 5 to the Company or an Affiliate. If a Participant’s employment or other service relationship is with an Affiliate and that entity ceases to be an Affiliate, the Participant’s Employment will be deemed to have terminated when the entity ceases to be an Affiliate unless the Participant transfers Employment to the Company or its remaining Affiliates. Notwithstanding the foregoing and the definition of “Affiliate” above, in construing the provisions of any Award relating to the payment of “nonqualified deferred compensation” (subject to Section 409A) upon a termination or cessation of Employment, references to termination or cessation of employment, separation from service, retirement or similar or correlative terms will be construed to require a “separation from service” (as that term is defined in Section 1.409A-1(h) of the Treasury Regulations, after giving effect to the presumptions contained therein) from the Company and from all other corporations and trades or businesses, if any, that would be treated as a single “service recipient” with the Company under Section 1.409A-1(h)(3) of the Treasury Regulations. The Company may, but need not, elect in writing, subject to the applicable limitations under Section 409A, any of the special elective rules prescribed in Section 1.409A-1(h) of the Treasury Regulations for purposes of determining whether a “separation from service” has occurred. Any such written election will be deemed a part of the Plan.

“ISO”: A Stock Option intended to be an “incentive stock option” within the meaning of Section 422. Each Stock Option granted pursuant to the Plan will be treated as providing by its terms that it is to be an NSO unless, as of the date of grant, it is expressly designated as an ISO.

“NSO”: A Stock Option that is not intended to be an “incentive stock option” within the meaning of Section 422.

“Participant”: A person who is granted an Award under the Plan.

“Performance Award”: An Award subject to Performance Criteria. The Administrator in its discretion may grant Performance Awards that are intended to qualify for the performance-based compensation exception under Section 162(m) and Performance Awards that are not intended so to qualify.

“Performance Criteria”: Specified criteria, other than the mere continuation of Employment or the mere passage of time, the satisfaction of which is a condition for the grant, exercisability, vesting or full enjoyment of an Award. For purposes of Awards that are intended to qualify for the performance-based compensation exception under Section 162(m), a Performance Criterion will mean an objectively determinable measure or measures of performance relating to any or any combination of the following (measured either absolutely or by reference to an index or indices and determined either on a consolidated basis or, as the context permits, on a divisional, subsidiary, line of business, project or geographical basis or in combinations thereof) : sales; revenues; assets; expenses; earnings before or after deduction for all or any portion of interest, taxes, depreciation, amortization or equity expense, whether or not on a continuing operations or an aggregate or per share basis; return on equity, investment, capital, capital employed or assets; one or more operating ratios; operating income or profit, including on an after-tax basis; net income; borrowing levels, leverage ratios or credit rating; market share; capital expenditures; cash flow; stock price; stockholder return; sales of particular products or services; customer acquisition or retention; acquisitions and divestitures (in whole or in part); joint ventures, strategic alliances, licenses or collaborations; spin-offs, split-ups and the like; reorganizations; recapitalizations, restructurings, financings (issuance of debt or equity) or refinancings; manufacturing or process development; or achievement of clinical trial or research objectives, regulatory or other filings or approvals or other product development milestones. A Performance Criterion and any targets with respect thereto determined by the Administrator need not be based upon an increase, a positive or improved result or avoidance of loss. To the extent consistent with the requirements for satisfying the performance-based compensation exception under Section 162(m), the Administrator may provide in the case of any Award intended to qualify for such exception that one or more of the Performance Criteria applicable to such Award will be adjusted in an objectively determinable manner to reflect events (for example, the impact of charges for restructurings, discontinued operations, mergers, acquisitions, extraordinary items, and other unusual or non-recurring items, and the cumulative effects of tax or accounting changes, each as defined by U.S. generally accepted accounting principles) occurring during the performance period that affect the applicable Performance Criterion or Criteria.

“Plan”: The Genoccea Biosciences, Inc. 2014 Equity Incentive Plan as from time to time amended and in effect.

“Restricted Stock”: Stock subject to restrictions requiring that it be redelivered or offered for sale to the Company if specified conditions are not satisfied.

“Restricted Stock Unit”: A Stock Unit that is, or as to which the delivery of Stock or cash in lieu of Stock is, subject to the satisfaction of specified performance or other vesting conditions.

“SAR”: A right entitling the holder upon exercise to receive an amount (payable in cash or in shares of Stock of equivalent value) equal to the excess of the fair market value of the shares of Stock subject to the right over the base value from which appreciation under the SAR is to be measured.

“Section 409A”: Section 409A of the Code.

“Section 422”: Section 422 of the Code.

“Section 162(m)”: Section 162(m) of the Code.

“Stock”: Common stock of the Company, par value \$0.001 per share.

“Stock Option”: An option entitling the holder to acquire shares of Stock upon payment of the exercise price.

“Stock Unit”: An unfunded and unsecured promise, denominated in shares of Stock, to deliver Stock or cash measured by the value of Stock in the future.

“Unrestricted Stock”: Stock not subject to any restrictions under the terms of the Award.

GENOCEA BIOSCIENCES, INC.
 ATTN: CORPORATE CONTROLLER
 100 ACORN PARK DRIVE, 5TH FLOOR
 CAMBRIDGE, MA 02140

VOTE BY INTERNET

Before The Meeting - Go to www.proxyvote.com

Use the Internet to transmit your voting instructions and for electronic delivery of information up until 11:59 p.m. Eastern Time the day before the cut-off date or meeting date. Have your proxy card in hand when you access the web site and follow the instructions to obtain your records and to create an electronic voting instruction form.

During The Meeting - Go to www.virtualshareholdermeeting.com/GNCA2020

You may attend the meeting via the Internet and vote during the meeting. Have the information that is printed in the box marked by the arrow available and follow the instructions.

VOTE BY PHONE - 1-800-690-6903

Use any touch-tone telephone to transmit your voting instructions up until 11:59 p.m. Eastern Time the day before the cut-off date or meeting date. Have your proxy card in hand when you call and then follow the instructions.

VOTE BY MAIL


Mark, sign and date your proxy card and return it in the postage-paid envelope we have provided or return it to Vote Processing, c/o Broadridge, 51 Mercedes Way, Edgewood, NY 11717.

TO VOTE, MARK BLOCKS BELOW IN BLUE OR BLACK INK AS FOLLOWS:

D07969-P33673

KEEP THIS PORTION FOR YOUR RECORDS
 DETACH AND RETURN THIS PORTION ONLY

THIS PROXY CARD IS VALID ONLY WHEN SIGNED AND DATED.

GENOCEA BIOSCIENCES, INC. The Board of Directors recommends you vote FOR the following:		For All	Withhold All	For All Except	To withhold authority to vote for any individual nominee(s), mark "For All Except" and write the number(s) of the nominee(s) on the line below.			
1. Election of Directors Nominees: 01) Mr. William Clark 02) Mr. Ronald Cooper 03) Dr. George Siber	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____				
The Board of Directors recommends you vote FOR the following proposals:		For	Against	Abstain	The Board of Directors recommends you vote FOR the following proposal:	For	Against	Abstain
2. To approve an amendment to the Company's restated certificate of incorporation to provide for an increase in the total number of shares of common stock that the Company is authorized to issue from 85,000,000 shares to 170,000,000 shares.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6. To ratify the appointment of Ernst & Young LLP as the independent registered public accounting firm for the Company for the fiscal year ending December 31, 2020.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. To approve an amendment to the Genoccea Biosciences, Inc. Amended and Restated 2014 Equity Incentive Plan to increase the number of shares of the Company's common stock reserved for issuance thereunder by 2,800,000 shares, to increase the individual non-employee director share limit contained in the plan and to remove the other individual participant limits contained in the plan.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NOTE: Such other business as may properly come before the meeting or any adjournment thereof.			
4. To approve, on an advisory basis, the compensation paid to our named executive officers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
The Board of Directors recommends you vote 1 year on the following proposal:	1 Year	2 Years	3 Years	Abstain				
5. To approve, on an advisory basis, the frequency of future advisory votes on the compensation paid to our named executive officers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Please sign exactly as your name(s) appear(s) hereon. When signing as attorney, executor, administrator, or other fiduciary, please give full title as such. Joint owners should each sign personally. All holders must sign. If a corporation or partnership, please sign in full corporate or partnership name by authorized officer.								
<input type="text"/> Signature [PLEASE SIGN WITHIN BOX]		<input type="text"/> Date		<input type="text"/> Signature (Joint Owners)		<input type="text"/> Date		

Important Notice Regarding the Availability of Proxy Materials for the Annual Meeting:
The Notice and Proxy Statement and Form 10-K are available at www.proxyvote.com.

D07970-P33673

PROXY
THIS PROXY IS SOLICITED ON BEHALF OF THE BOARD OF DIRECTORS
OF GENOCEA BIOSCIENCES, INC.

The undersigned hereby appoints William Clark as proxy and attorney-in-fact, with full power of substitution, and hereby authorizes him to represent and vote, as provided on the other side, all the shares of GENOCEA BIOSCIENCES, INC. common stock which the undersigned is entitled to vote and, in his discretion, to vote upon such other business as may properly come before the Annual Meeting of Stockholders of the Company to be held on Monday, June 1, 2020 at 9:00 A.M. EDT or any adjournment thereof, with all powers which the undersigned would possess if present at the Meeting.

THIS PROXY CARD, WHEN PROPERLY EXECUTED, WILL BE VOTED IN THE MANNER DIRECTED HEREIN BY THE UNDERSIGNED. IF NO DIRECTION IS MADE BUT THE CARD IS SIGNED, THIS PROXY CARD WILL BE VOTED (i) FOR the election as directors of the nominees named herein to the Company's Board of Directors for a three-year term; (ii) FOR approval of an amendment to the Company's restated certificate of incorporation to provide for an increase in the total number of shares of common stock that the Company is authorized to issue from 85,000,000 shares to 170,000,000 shares; (iii) FOR approval of an amendment to the Genoclea Biosciences, Inc. Amended and Restated 2014 Equity Incentive Plan to increase the number of shares of the Company's common stock reserved for issuance thereunder by 2,800,000 shares, to increase the individual non-employee director share limit contained in the plan and to remove the other individual participant limits contained in the plan; (iv) FOR approval, on an advisory basis, the compensation paid to our named executive officers; (v) 1 YEAR for approval, on an advisory basis, the frequency of future advisory votes on the compensation paid to our named executive officers; (vi) FOR the ratification of Ernst & Young LLP as the independent registered public accounting firm for the Company for the fiscal year ending December 31, 2020; and (vii) according to the discretion of the proxy holder named in the proxy card upon any other business that may properly be brought before the Annual Meeting and at all adjournments and postponements thereof.

Continued and to be signed on reverse side