

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**

Washington, D.C. 20549

FORM 10-K/A

(Amendment No. 1)

(Mark One)

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

For the year ended December 31, 2019

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

For the transition period from to

Commission File Number: 001-36571

T2 Biosystems, Inc.

(Exact name of registrant as specified in its charter)

Delaware

(State or other jurisdiction of
incorporation or organization)

101 Hartwell Avenue, Lexington, MA

(Address of principal executive offices)

20-4827488

(I.R.S. Employer
Identification No.)

02421

(Zip code)

Registrant's telephone number, including area code: 781-761-4646

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, par value \$0.001	TTOO	The Nasdaq Global Market

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

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act of 1933, as amended. YES NO

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934, as amended. YES NO

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

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

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

Large accelerated filer

Non-accelerated filer

Accelerated filer

Smaller reporting company

Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. Yes No

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

As of June 28, 2019, the last business day of the registrant's most recently completed second fiscal quarter, the aggregate market value of the registrant's common stock held by non-affiliates was approximately \$64.0 million based on the closing price for the common stock of \$1.68 on that date. Shares of common stock held by each executive officer, director, and their affiliated stockholders have been excluded from this calculation as such persons may be deemed to be affiliates. This determination of affiliate status is not necessarily a conclusive determination for other purposes.

The number of outstanding shares of the registrant's common stock on April 15, 2020 was 119,172,630. The common stock is listed on The Nasdaq Global Market (trading symbol "TTOO").

DOCUMENTS INCORPORATED BY REFERENCE

None.

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EXPLANATORY NOTE

This Amendment No. 1 on Form 10-K/A (the "Amendment") is being filed by T2 Biosystems, Inc. (the "Company") to amend its Annual Report on Form 10-K for the fiscal year ended December 31, 2019, originally filed with the Securities and Exchange Commission (the "SEC") on March 16, 2020 (the "Original Filing"). We are filing this Amendment to (i) present the information required by Items 10 through 14 of Part III of the Original Filing, which information was previously omitted from the Original Filing in reliance on General Instruction G(3) to Form 10-K and (ii) to add Exhibit 4.4 – "Description of Securities Registered under Section 12 of the Securities Exchange Act of 1934" as a document filed as an exhibit to the Form 10-K.

General Instruction G(3) to Form 10-K permits the information in Items 10 through 14 of Part III to be incorporated in the Form 10-K by reference from a definitive proxy statement if such proxy statement is filed by the Company no later than 120 days after our fiscal year end. We are filing this Amendment because we do not expect to file a definitive proxy statement within 120 days of the end of fiscal year ended December 31, 2019 due to the timing of our Annual Meeting of Stockholders. The reference on the cover of the Original Filing to the incorporation by reference to portions of our definitive proxy statement into Part III of the Original Filing is hereby deleted.

As contemplated by Item 601(b)(4)(vi) of SEC Regulation S-K and Instruction 1 to such Item 601(b)(4)(vi), Exhibit 4.4 provides the information required by Item 202(a) through (d) and (f) of SEC Regulation S-K with respect to the shares of common stock, par value \$0.001 per share (the "Common Stock"), of the Company. The Common Stock is the only class of securities of the Company registered under Section 12 of the Securities Exchange Act of 1934, as amended.

Except for the matters described above, this Amendment does not update or otherwise amend the Original Filing as previously filed. This Amendment does not update the Original Filing for changes in events, estimates or other developments subsequent to the date of the original filing of the Original Filing on March 16, 2020. Accordingly, this Amendment should be read in conjunction with the Original Filing.

In addition, as required by Rule 12b-15 under the Securities Exchange Act of 1934, as amended (the "Exchange Act"), new certifications by the Company's principal executive officer and principal financial officer are filed herewith as exhibits to this Amendment pursuant to Rule 13a-14(a) or 15d-14(a) of the Exchange Act. As no financial statements have been included in this Amendment and it does not contain or amend any disclosure with respect to Items 307 or 308 of Regulation S-K, paragraphs 3, 4, and 5 of the certifications have been omitted. The Company is not including certifications pursuant to Section 1350 of Chapter 63 of Title 18 of the United States Code (18 U.S.C. 1350) as no financial statements are being filed with this Amendment No. 1.

PART III.

Item 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

Board of Directors

Our board of directors currently consists of eight directors. Set forth below is certain information regarding our current directors as of the date hereof.

<u>Name</u>	<u>Positions and Offices Held with T2 Biosystems</u>	<u>Director Since</u>	<u>Class and Year in Which Term Will Expire</u>	<u>Age</u>
John McDonough	Chairman of the Board	2007	Class I-2021	60
Adrian Jones	Director	2016	Class I-2021	55
Seymour Liebman	Director	2016	Class I-2021	70
Michael J. Cima, Ph.D.	Director	2006	Class II-2022	60
Stanley Lapidus	Director	2008	Class III-2020	70
John W. Cumming	Director	2014	Class III-2020	74
David Elsbree	Director	2014	Class III-2020	72
John Sperzel	Chief Executive Officer, President and Director	2020	Class II-2022	56

Set forth below are the biographies of each director, as well as a discussion of the particular experience, qualifications, attributes, and skills that led our Board of Directors to conclude that each person nominated to serve or currently serving on our Board of Directors should serve as a director. In addition to the information presented below, we believe that each director meets the minimum qualifications established by the nominating and corporate governance committee of our Board of Directors.

John Sperzel has served as our President and Chief Executive Officer and a member of our Board of Directors since January 2020. From March 2014 to January 2020, Mr. Sperzel was the Chief Executive Officer, President and a member of the Board of Directors of Chembio Diagnostics, Inc., a point-of-care diagnostics company focused on infectious diseases. From September 2011 to December 2013, Mr. Sperzel was the Chief Executive Officer and President of International Technidyne Corporation, a developer of point-of-care cardiovascular diagnostic testing solutions. Mr. Sperzel received his Bachelor of Science degree in Business Administration/Management from Plymouth State College. Mr. Sperzel's extensive management experience as a senior executive and his diagnostic company experience contributed to our Board of Directors' conclusion that he should serve as a director of our company.

John McDonough has served as the Non-Executive Chairman of our Board of Directors since January 2020. He served as a director, and our President and CEO since 2007 and served as Executive Chairman from July 2019 to July 2020. From 2003 to 2007, Mr. McDonough held various positions at Cytoc Corporation, a company engaged in the design, development, manufacturing and marketing of clinical products that focus on women's health, where he ultimately served as President of Cytoc Development Corporation. Mr. McDonough received his B.S.B.A. from Stonehill College. Mr. McDonough's extensive diagnostic company experience contributed to our Board of Directors' conclusion that he should serve as a director of our company.

Michael J. Cima, Ph.D. is one of our founders and has served as a member of our Board of Directors since 2006. Since 1986, Dr. Cima has been a Professor of Materials Science and Engineering at Massachusetts Institute of Technology, or MIT, and he currently holds the David H. Koch Engineering Chair and an appointment at the Koch Institute for Integrative Cancer Research. Dr. Cima received his B.S. in chemistry and his Ph.D. in chemical engineering, both from the University of California at Berkeley. Dr. Cima's extensive life science experience and knowledge of the diagnostics industry contributed to our Board of Directors' conclusion that he should serve as a director of our company.

John W. Cumming has served as a member of our Board of Directors since July 2014 and also serves as a member of the Board of Directors of TransMed7, LLC. Mr. Cumming currently serves as Chief Executive Officer and Managing Director of Cumming & Associates LLC, a strategic advisory firm serving the healthcare industry. From August 2000 until December 2013, Mr. Cumming served in a number of leadership roles at Hologic Inc., a diagnostics company, including as Chief Executive Officer from 2001 through 2009 and again from July 2013 through December 2013, as President from 2001 until 2003, as Chairman of the Board from 2002 until 2007 and again from 2008 through 2011, and as

Global Strategic Advisor from 2011 through July 2013. Mr. Cumming attended the University of South Carolina. Mr. Cumming’s extensive knowledge of and experience with diagnostic product companies and expertise as a strategic advisor focused on the healthcare industry contributed to our Board of Directors’ conclusion that he should serve as a director of our company.

David Elsbree has served as a member of our Board of Directors since July 2014. From 1970 until 2004, Mr. Elsbree was employed by Deloitte & Touche, most recently as a senior partner. Mr. Elsbree served in a number of leadership roles in the firm’s high technology practice, including partner-in-charge of the New England High Technology Practice. Mr. Elsbree served on the board of directors of Art Technology Group, Inc. from June 2004 until January 2011 and on the board of directors of Acme Packet, Inc. from November 2006 until March 2013. Mr. Elsbree received his B.A. from Northeastern University. Mr. Elsbree’s extensive knowledge of and experience with technology companies and financial expertise contributed to our Board of Directors’ conclusion that he should serve as a director of our company.

Stanley N. Lapidus has served as a member of our Board of Directors since August 2008 and also serves as a member of the Board of Directors of private companies Glympse Bio, Mirvie (formerly AknaDx), Fractyl Laboratories, Binx Health (formerly Atlas Genetics) and PathAI. Since 2008 Mr. Lapidus has served as Managing Director of LapidX Research Associates, a firm focused on medical devices and diagnostics. From 2009 to 2016, Mr. Lapidus was President and Chief Executive Officer of SynapDx, an autism early detection company he founded. From 2003 to 2008, Mr. Lapidus was Chief Executive Officer of Helicos Biosciences, a life science company he co-founded in 2003. From 1995 to 2001, he was Chief Executive Officer of EXACT Sciences, a colorectal cancer diagnostics company he founded in 1995. From 1987 to 1994, he was Chief Executive Officer of Cytoc Corp., a cervical cancer diagnostics company he founded in 1987. Mr. Lapidus held an academic appointment at MIT from 2002 to 2017. He received his B.S. in engineering from Cooper Union. Mr. Lapidus’ experience as a senior executive and his knowledge of life science companies contributed to our Board of Directors’ conclusion that he should serve as a director of our company.

Adrian Jones has served as a member of our Board of Directors since March 2015. Since 1994, Mr. Jones has been employed by Goldman, Sachs & Co., currently serving as a managing director, vice chairman of the Corporate Private Equity Business in the Merchant Banking Division and a member of the MBD Corporate Investment Committee and the Sustainable Finance Group Steering Committee. From 1983 to 1989, Mr. Jones served as a lieutenant in the Irish Army, including two years in the United Nations Peacekeeping Force in Southern Lebanon. In the last five years, Mr. Jones has represented GS Capital Partners on the board of directors of Education Management Corp., a public company, from 2006 to 2015. In addition, Mr. Jones serves on the boards of Autism Speaks, The American Ireland Fund and the Galway University Foundation. Mr. Jones received his M.B.A. from Harvard Business School, his M.A. in Economics from University College, Dublin and his B.A. in Economics and Politics from University College, Galway. Mr. Jones’ management experience, including his extensive experience in business strategy for healthcare companies, contributed to our Board of Directors’ conclusion that he should serve as a director of our company.

Seymour Liebman has served as a member of our Board of Directors since September 2016. Mr. Liebman has been employed by Canon USA, Inc., a leading provider of consumer, business-to-business, and industrial imaging solutions to the United States and to the Latin American and the Caribbean markets, since 1974 and currently serves as the Executive Vice President, Chief Administrative Officer and General Counsel and Senior Managing Executive Officer of Canon Inc., Japan. Mr. Liebman received his J.D. from Touro Law School, his M.S. in mathematics from Rutgers University, his M.S. in accounting from Long Island University and his B.A. in mathematics from Hofstra University. Mr. Liebman’s management and board experience contributed to our Board of Directors’ conclusion that he should serve as a director of our company.

Executive Officers

The following table identifies our executive officers and sets forth their current position(s) at T2 Biosystems and their ages as of the date hereof.

Name	Age	Position
John Sperzel	56	Chief Executive Officer, President and Director
Thomas J. Lowery, Ph.D.	41	Chief Scientific Officer
John Sprague	61	Chief Financial Officer
Michael Gibbs, Esq.	49	Vice President and General Counsel
Alec Barclay	39	Senior Vice President, Operations
Anthony Pare	58	Chief Commercial Officer

Information concerning John Sperzel, our Chief Executive Officer, may be found above under “ *Board of Directors* ”.

Thomas J. Lowery, Ph.D. has served as our Chief Scientific Officer since September 2013. Since joining our company in 2007, Dr. Lowery has held various technical leadership roles in the assay, methods, reagents and detector development programs. Prior to joining our company, Dr. Lowery conducted research at the University of California Berkeley focused on developing innovative magnetic resonance based biosensors

for molecular imaging. Dr. Lowery received his Ph.D. in chemistry from the University of California, Berkeley and his B.S. in biochemistry from Brigham Young University.

John Sprague has served as our Chief Financial Officer since January 2018. Prior to joining our company, Mr. Sprague was Chief Financial Officer at Caliber Imaging & Diagnostics, Inc., a medical technologies company that designs, develops and markets innovative digital imaging solutions that show tissue at the cellular level using in-vivo confocal microscopes designed specifically for imaging skin and other tissues for pathology and life sciences, from February 2017 to January 2018. From 2011 to 2017, Mr. Sprague held various positions at GE Healthcare, with his last assignment serving as Finance Manager of GE's North American Core Imaging business. Mr. Sprague is a certified public accountant and received his BS in accounting from Boston College.

Michael Gibbs, Esq. has served as our Vice President and General Counsel since January 2016. Mr. Gibbs joined our company in December 2014 as Senior Corporate Counsel. From 2011 until he joined our company, Mr. Gibbs was General Counsel for Keystone Dental, Inc., a medical device company focused on dental implants and biomaterials. From 2003 to 2011, Mr. Gibbs was a corporate attorney with the law firm Bingham McCutchen LLP (now Morgan Lewis & Bockius). Prior to joining Bingham McCutchen LLP, he was an officer in the United States Marine Corps, departing with the rank of Major. Mr. Gibbs received his J.D. from Boston College Law School and his B.S. in Political Science from Syracuse University.

Alec Barclay has served as our Senior Vice President, Operations since March 2018. Mr. Barclay joined our company in April 2016 as Vice President of Product Development and Product Management. Prior to joining the Company, Mr. Barclay served as the Director of Hardware and Systems Engineering at Becton Dickinson, a medical technology company that manufactures and sells medical devices, instrument systems, and reagents, within their Genomics division from January 2015 to April 2016. Prior to joining Becton Dickinson, he held various positions within Siemens Healthcare from July 2006 to December 2014, with his last assignment serving as Senior Manager, Lead Systems Integrator. Mr. Barclay received his BSME from Rochester Institute of Technology.

Anthony Pare has served as our Chief Commercial Officer since January 8, 2020. Mr. Pare joined our company in 2019 as Vice President and General Manager of International. Prior to joining T2, Mr. Pare was the Chief Commercial Officer for Hemanext, a pre-revenue company developing a new technology that improves the quality, consistency and efficacy of red cell transfusion therapy from July 2016 to April 2019. Prior to joining Hemanext, Mr. Pare was the Vice President of Business Development, Mergers and Acquisitions for Haemonetics Corporation, a blood management company from January 1997 to May 2015. Mr. Pare received a B.S. in Engineering from Maine Maritime Academy and a Masters in Engineering Administration from George Washington University.

Delinquent Section 16(a) Reports

Section 16(a) of the Exchange Act requires our officers and directors and persons who beneficially own more than 10% of any class of our equity securities registered pursuant to Section 12 of the Exchange Act (collectively, "Reporting Persons") to file reports of beneficial ownership and changes in beneficial ownership with the SEC. Based on a review of copies of Forms 3, 4 or 5 filed by the Company on behalf of its directors and officers and upon any written representations of the Reporting Persons received by us, the Company believes that during and with respect to the fiscal year ended December 31, 2019, there has been compliance with all Section 16(a) filing requirements applicable to such Reporting Persons, except that one Form 4 for each of John McDonough, Tom Lowery, Michael Gibbs, Alec Barclay and Adrian Jones was inadvertently filed one day late.

Code of Business Conduct and Ethics

We have adopted a code of business conduct and ethics for our directors, officers and employees, including our principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions, which is available on our website at www.t2biosystems.com in the Investor Relations section under "Corporate Governance." If we make any amendments to the code of business conduct and ethics or grant any waiver from a provision of the code of business conduct and ethics to any executive officer or director, we will promptly disclose the nature of the amendment or waiver on our website to the extent required by law or the listing standards of The Nasdaq Stock Market LLC ("Nasdaq"). The information on, or that can be accessed from, our website is not incorporated by reference into this Annual Report.

Procedures for the Recommendation of Director Nominees by Stockholders

There have been no changes to the procedures by which stockholders can recommend nominees to the Board of Directors since such procedures were previously disclosed in the Company's Proxy Statement for its 2019 Annual Meeting of Stockholders.

Audit Committee and Audit Committee Financial Expert

David Elsbree, Michael Cima and Stanley Lapidus currently serve on the audit committee, which is chaired by David Elsbree. Our Board of Directors has determined that each member of the audit committee is "independent" for audit committee purposes as that term is defined in the rules of the SEC and the applicable Nasdaq Rules. Our Board of Directors has designated David Elsbree as an "audit committee financial expert," as defined under the applicable rules of the SEC. The audit committee's responsibilities include:

- appointing, overseeing the independence of, and setting the compensation of our independent auditor;
- overseeing the work of the independent auditor, including through the receipt and consideration of reports from such firm;
- reviewing and discussing with management and our independent auditor our annual and quarterly financial statements and related disclosures;
- coordinating the Board's oversight of our internal control over financial reporting, disclosure controls and procedures;
- discussing our risk management and risk assessment policies;
- establishing procedures for the receipt, retention and treatment of complaints regarding accounting, internal accounting controls or auditing matters;
- reviewing the company's policies and procedures for reviewing and approving or ratifying any related person transactions;
- meeting independently with our internal auditing staff, if any, independent auditors and management; and
- preparing the audit committee report.

Item 11. EXECUTIVE COMPENSATION

EXECUTIVE COMPENSATION

This section discusses the material components of the executive compensation program offered to our named executive officers identified below. For 2019, our named executive officers and their positions as of December 31, 2019 were:

- John McDonough, President and Chief Executive Officer;
- Thomas J. Lowery, Ph.D., Chief Scientific Officer; and
- Alec Barclay, Senior Vice President, Operations.

Mr. McDonough resigned as our President and Chief Executive Officer effective January 8, 2020.

Overview

Our compensation programs are designed to:

- attract and retain individuals with superior ability and managerial experience;
- align executive officers' incentives with our corporate strategies, business objectives and the long-term interests of our stockholders; and
- increase the incentive to achieve key strategic performance measures by linking incentive award opportunities to the achievement of performance objectives and by providing a portion of total compensation for executive officers in the form of ownership in the company.

Our compensation committee is primarily responsible for establishing and approving, or recommending for approval by the Board of Directors, the compensation for all of our executive officers. The compensation committee oversees our compensation and benefit plans and policies, administers our equity incentive plans and reviews and approves, or recommends for approval by the Board of Directors, annually all compensation decisions relating to all of our executive officers, including our chief executive officer. The compensation committee typically considers, and during 2019 did consider, recommendations from our chief executive officer regarding the compensation of our executive officers other than himself. Our compensation committee has the authority under its charter to engage the services of a consulting firm or other outside advisor to assist it in designing our compensation programs and in making compensation decisions and has engaged Arnosti Consulting to provide these services. The compensation committee reviewed compensation assessments provided by Arnosti Consulting comparing our executive compensation program to that of a group of peer companies within our industry and met with Arnosti Consulting to discuss compensation of our executive officers, including the chief executive officer, and to receive input and advice. The compensation committee has

considered the adviser independence factors required under SEC rules as they relate to Arnosti Consulting and does not believe Arnosti Consulting's work in 2019 raised a conflict of interest.

Executive Compensation Components

Our executive compensation program consists of base salary, cash incentive bonuses, long-term incentive compensation in the form of stock options and restricted stock units, and a broad-based benefits program. We have not adopted any formal guidelines for allocating total compensation between long-term and short-term compensation, cash compensation and non-cash compensation, or among different forms of non-cash compensation. The compensation committee considers a number of factors in setting compensation for its executive officers, including company performance, as well as the executive's performance, experience, responsibilities and the compensation of executive officers in similar positions at comparable companies.

Base Salary

Our named executive officers receive base salaries to compensate them for the satisfactory performance of duties to our company. The base salary payable to each named executive officer is intended to provide a fixed component of compensation reflecting the executive's skill set, experience, role and responsibilities. Base salaries for our named executive officers have generally been set at levels deemed necessary to attract and retain individuals with superior talent. For 2019, Mr. McDonough's annual base salary was \$550,000 and Dr. Lowery's annual base salary was \$362,250. Mr. Barclay's base salary was \$340,000, effective March 1, 2019, in conjunction with the annual merit increases.

Cash Incentive Compensation

Each of our named executive officers is eligible to participate in an annual cash incentive compensation program which provides participants with an opportunity to earn variable cash incentive compensation based on individual and company performance. For 2019, Mr. McDonough's target bonus was 85% of his base salary and Dr. Lowery's and Mr. Barclay's target bonuses were 60% of their base salaries.

Objectives for the 2019 annual cash incentive compensation program were established in January 2019 by our compensation committee and generally related to attaining clinical, business development and financing milestones and publication, commercialization and operational goals. The determination of 2019 bonus amounts was based on a non-formulaic assessment of these factors, as well as our compensation committee's subjective evaluation of our company's overall performance and each named executive officer's individual performance and contribution to our company. The compensation committee did not assign specific weights to any elements of our bonus program in determining 2019 bonuses.

After considering these factors, the Board of Directors, based upon the recommendation of our compensation committee, approved a bonus for Mr. McDonough, Dr. Lowery and Mr. Barclay. The annual variable cash incentive compensation earned by our named executive officers for 2019 is set forth in the "Non-Equity Incentive Plan Compensation" column of our 2019 Summary Compensation Table.

In 2019, we also awarded Mr. Barclay a cash bonus of \$35,000 in respect of leading the Company's recovery efforts following a cyber-attack in August 2019.

Equity-Based Compensation

We generally grant stock options and restricted stock unit awards to our employees, including our named executive officers, as the long-term incentive component of our compensation program. We typically grant stock options to employees when they commence employment with us and may thereafter grant additional options and restricted stock unit awards in the discretion of our Board of Directors. Our stock options granted upon commencement of employment typically vest as to 25% of the shares subject to the option on the first anniversary of the date of grant and in substantially equal monthly installments over the ensuing 36 months, subject to the holder's continued employment with us. Additional stock options granted after the commencement of employment typically vest in substantially equal monthly installments over 48 months. Our restricted stock unit awards typically vest in substantially equal annual installments over 24 to 36 months, subject to the holder's continued employment with us. Each restricted stock unit entitles the holder to receive one share of our common stock or its cash value upon vesting or a later settlement date. From time to time, our Board of Directors may also construct alternate vesting schedules as it determines are appropriate to motivate particular employees.

We awarded stock options and restricted stock unit awards to our named executive officers in 2019 in the following amounts:

Named Executive Officer	February 2019 Options Granted #(1) (2)	September 2019 Options Granted #(1)(3)	February 2019 RSUs Granted #(4)
John McDonough	200,000	—	100,000
Thomas J. Lowery	60,000	100,000	30,000

- (1) Stock options were granted with exercise prices equal to the fair market value of our common stock on the date of grant.
- (2) The options vest in 48 substantially equal monthly installments from February 21, 2019.
- (3) The options vest in 36 substantially equal monthly installments from September 10, 2019.
- (4) The RSUs vest in three substantially equal annual installments commencing February 21, 2020.

Retirement, Health, Welfare and Additional Benefits

Our named executive officers are eligible to participate in our employee benefit plans and programs, including medical and dental benefits, flexible spending accounts and short-and long-term disability and life insurance, to the same extent as our other full-time employees, subject to the terms and eligibility requirements of those plans. Our named executive officers are also eligible to participate in a tax-qualified 401(k) defined contribution plan to the same extent as all of our other full-time employees. We make company contributions for participants in the 401(k) plan equal to 50% of the participant's contribution, up to 2% of the participant's eligible compensation or \$3,000 per year, whichever is lesser.

2019 Summary Compensation Table

Name and Principal Position	Year	Salary (\$)(1)	Bonus(\$)	Stock Awards \$(2)	Option Awards \$(3)	Non-Equity Incentive Plan Compensation \$(4)	All Other Compensation \$(5)	Total (\$)
John McDonough, President and Chief Executive Officer	2019	550,000		372,000	478,728	233,750	3,000	1,637,478
	2018	497,917	31,250	2,230,170	951,518	309,375	3,000	4,023,230
Thomas J. Lowery, Chief Scientific Officer	2019	362,250		111,600	246,226	108,675	3,000	831,751
	2018	360,208		579,070	285,456	135,844	3,000	1,363,578
Alec Barclay, Senior Vice President, Operations	2019	337,500	35,000 (6)	111,600	348,834	102,000	2,900	937,834

- (1) Amounts in this column represent base salaries earned for 2019 rather than 2019 annual base salary rates.
- (2) Represents the aggregate grant date fair value of the restricted stock unit awards granted during the given year computed in accordance with FASB ASC Topic 718, excluding the effect of estimated forfeitures. For a description of the assumptions used in valuing these awards, see note 8 to our audited consolidated financial statements included in our Annual Report on Form 10-K filed with the SEC on March 16, 2020.
- (3) Represents the aggregate grant date fair value of the option awards granted during the given year computed in accordance with FASB ASC Topic 718, excluding the effect of estimated forfeitures. For a description of the assumptions used in valuing these awards, see note 8 to our audited consolidated financial statements included in our Annual Report on Form 10-K filed with the SEC on March 16, 2020.
- (4) Represents awards earned under our annual cash incentive compensation program. For additional information regarding these amounts, see the section titled "Executive Compensation Components—Cash Incentive Compensation" above.
- (5) Represents Company matching contributions under our 401(k) plan.
- (6) Represents a cash bonus paid in respect of leading the Company's recovery efforts following a cyber-attack in August 2019.

Outstanding Equity Awards at Fiscal Year-End Table—2019

Name	Vesting Commencement Date	Option Awards		Option Exercise Price (\$)	Option Expiration Date	Stock Awards			
		Number of Securities Underlying Unexercised Options Exercisable (#)	Number of Securities Underlying Unexercised Options Unexercisable (#)(1)			Number of Shares or Units of Stock That Have Not Vested (#)(2)(3)	Market Value of Shares of Units of Stock That Have Not Vested (#)(4)	Equity Incentive Plan Awards: Number of Unearned Shares or Units of Stock That Have Not Vested (#)(3)(5)	Equity Incentive Plan Awards: Market or Payout Value of Unearned Shares or Units of Stock That Have Not Vested (#)(4)
John McDonough	02/21/2019	41,667	158,333	3.72	02/21/2029	—	—	—	—
	03/01/2018	131,250	168,750	5.08	03/01/2028	—	—	—	—
	02/09/2017	70,833	29,167	5.67	02/09/2027	—	—	—	—
	01/20/2016	130,556	2,778	9.02	01/20/2026	—	—	—	—

	02/13/2015	134,124		19.95	02/13/2025	—	—		
	07/02/2014	66,411	—	10.69	07/02/2024	—	—		
	01/22/2014	33,205	—	3.21	01/22/2024	—	—		
	—	166,029	—	3.21	10/24/2023	—	—		
	—	194,558	—	2.45	01/17/2022	—	—		
	—	120,087	—	1.96	09/14/2020	—	—		
	02/21/2019	—	—	—	—	100,000	117,000		
	03/15/2018	—	—	—	—	—	—	326,087	381,522
	02/09/2017	—	—	—	—	16,667	19,500		
Thomas J. Lowery	09/10/2019	8,333	91,667	1.43	09/10/2029	—	—		
	02/21/2019	12,500	47,500	3.72	02/21/2029	—	—		
	03/01/2018	39,375	50,625	5.08	03/01/2028	—	—		
	02/09/2017	24,792	10,208	5.67	02/08/2027	—	—		
	01/20/2016	57,575	1,225	9.02	01/20/2026	—	—		
	02/13/2015	44,460	—	19.95	02/13/2025	—	—		
	07/02/2014	26,564	—	10.69	07/02/2024	—	—		
	02/21/2019	—	—	—	—	30,000	35,100		
	03/15/2018	—	—	—	—	—	—	80,539	94,231
	02/09/2017	—	—	—	—	5,833	6,825		
Alec Barclay	09/10/2019	16,667	183,333	1.43	09/10/2029	—	—		
	02/21/2019	12,500	47,500	3.72	02/21/2029	—	—		
	03/01/2018	39,375	50,625	5.08	03/01/2028	—	—		
	01/05/2017	10,938	4,062	5.19	01/05/2027	—	—		
	09/12/2016	8,125	1,875	6.79	09/12/2026	—	—		
	04/25/2016	13,750	1,250	9.32	04/25/2026	—	—		
	02/21/2019	—	—	—	—	30,000	35,100		
	03/15/2018	—	—	—	—	—	—	72,258	84,542

- (1) All unvested options for Mr. McDonough and Dr. Lowery vest in substantially equal monthly installments over the 48 month vesting period from the vesting commencement date with the exception of Dr. Lowery's September 10, 2019 grant which vests in substantially equal monthly installments over the 36 month period; in each case, subject to the holder's continued employment with us through the applicable vesting date and potential accelerated vesting as described in the sections titled "Employment Letter Agreements with Our Named Executive Officers" and "Potential Payments upon a Change in Control" below. The unvested options for Mr. Barclay (a) granted in 2016 vest as to 25% of the shares subject to the option on the first anniversary of the vesting commencement date and as to the remaining shares subject to the option in substantially equal monthly installments over the ensuing 36 months, (b) granted on September 10, 2019 vest in substantially equal monthly installments over the 36 month period from the vesting commencement date, and (c) granted on all other dates vest in substantially equal monthly installments over the 48 month period from the vesting commencement date; in each case, subject to Mr. Barclay's continued employment with us through the applicable vesting date and potential accelerated vesting as described in the sections titled "Employment Letter Agreements with Our Named Executive Officers" and "Potential Payments upon a Change in Control" below.
- (2) All unvested restricted stock units for Mr. McDonough and Dr. Lowery (a) granted on February 9, 2017, vest in full on February 9, 2020. All unvested restricted stock units for Mr. McDonough, Dr. Lowery and Mr. Barclay, granted on February 21, 2019, vest in three substantially equal annual installments beginning on February 21, 2020, each subject to the holder's continued employment with us through the applicable vesting date and potential accelerated vesting as described in the sections titled "Employment Letter Agreements with Our Named Executive Officers" and "Potential Payments upon a Change in Control" below.
- (3) Pursuant to Mr. McDonough's amended employment letter, in connection with his resignation effective January 8, 2020, (a) vesting was accelerated for the 116,667 unvested restricted stock units and (b) the 326,087 unvested performance-based restricted stock units were cancelled, on January 8, 2020.
- (4) Based on the closing price of our common stock on December 31, 2019 of \$1.17.
- (5) The performance-based restricted stock units issued on March 15, 2018, vest upon achievement of pre-established 90-day average stock price targets, if achieved between March 15, 2018 and March 18, 2021, subject to the holder's continued employment with us through the applicable vesting date and potential accelerated vesting as described in the sections titled "Employment Letter Agreements with Our Named Executive Officers" and "Potential Payments upon a Change in Control" below.

Employment Letter Agreements with Our Named Executive Officers

We have entered into employment and/or severance letter agreements with each of the named executive officers. Certain key terms of these agreements are described below.

John McDonough. In July 2019, we entered into an amendment to the employment letter agreement with Mr. McDonough which provided that, in consideration for his agreement to resign his position as President and Chief Executive Officer and to continue to serve through the date his successor commences employment or earlier termination without cause and his execution and non-revocation of a general release of claims, upon his resignation he would be entitled to receive (i) continued base salary for 15 months following the termination date, which equals an aggregate amount of \$687,500, (ii) an amount equal to \$233,750, which represents 50% of his current target annual bonus, payable in a single lump sum on March 15 of the year following the year in which the termination date occurs, (iii) if such termination occurred prior to his receipt of an annual bonus in respect of 2019, the amount of any annual bonus that would have been earned had Mr. McDonough remained employed, based

on actual performance and pro-rated for the portion of 2019 that Mr. McDonough remained employed (or, if his termination occurred in a subsequent year, the amount of any annual bonus that would have been earned had Mr. McDonough remained employed, based on actual performance and pro-rated for the portion of such year that Mr. McDonough remained employed), payable in a lump sum on March 15 of the year following the year in his termination date occurred, (iv) all premium payments for up to 15 months of continued medical coverage under COBRA; and (v) accelerated vesting of the time-vesting restricted stock unit awards granted to Mr. McDonough in February 2017 and February 2019.

Mr. McDonough's employment letter agreement also contains restrictive covenants pursuant to which he has agreed to refrain from competing with us or soliciting our customers, prospective customers, employees or consultants for one year following his termination of employment.

Thomas J. Lowery, PhD. We have entered into an employment letter agreement with Dr. Lowery, which provides that if Dr. Lowery's employment is terminated by us without cause within the three months preceding or the 12 months following a change in control, or if Dr. Lowery resigns his employment for good reason within the 12 months following a change in control, and he timely executes a release of claims in our favor, he will be entitled to receive 12 months of base salary continuation, accelerated vesting of all outstanding unvested equity awards and reimbursement for a portion (based on active employee cost sharing rates) of healthcare premiums for up to 12 months.

Dr. Lowery has also entered into a non-compete, non-disclosure and invention assignment agreement with us pursuant to which he has agreed to refrain from disclosing our confidential information indefinitely and from competing with us or soliciting our employees or consultants for 12 months following termination of his employment.

Alec Barclay. We have entered into a severance letter agreement with Mr. Barclay, which provides that if Mr. Barclay's employment is terminated by us without cause within the three months preceding or the 12 months following a change in control, or if Mr. Barclay resigns his employment for good reason within the 12 months following a change in control, and he timely executes a release of claims in our favor, he will be entitled to receive 12 months of base salary continuation, accelerated vesting of all outstanding unvested equity awards and reimbursement for a portion (based on active employee cost sharing rates) of healthcare premiums for up to 12 months.

Mr. Barclay has also entered into a non-compete, non-disclosure and invention assignment agreement with us pursuant to which he has agreed to refrain from disclosing our confidential information indefinitely and from competing with us or soliciting our employees or consultants for 12 months following termination of his employment.

Potential Payments Upon a Change in Control

As described above, under the terms of their individual agreements with the Company, Dr. Lowery and Mr. Barclay may become entitled to payments or benefits in connection with certain terminations of employment that occur at specified times around a change in control.

In addition, the agreements governing Mr. McDonough's, Dr. Lowery's and Mr. Barclay's unvested stock options and restricted stock units provide for full accelerated vesting if their employment is terminated by us without cause within the three months preceding or the 12 months following a change of control or if they resign for good reason within 12 months following a change in control. Mr. McDonough received the benefits and payment described above in connection with his resignation effective January 8, 2020.

DIRECTOR COMPENSATION

The following table presents the total compensation for each person who served as a member of our Board of Directors during 2019, other than Mr. McDonough. Mr. McDonough, who was also our Chief Executive Officer during 2019, received no compensation for his service as a director during 2019. The compensation earned by Mr. McDonough as our Chief Executive Officer during 2019 is presented in the 2019 Summary Compensation Table.

Director Compensation Table—2019

	Fees Earned or Paid in Cash \$(1)	Option Awards \$(2)	Total (\$)
Michael J. Cima, Ph.D.	62,500	21,198	83,698
John W. Cumming	48,500	21,198	69,698
David B. Elsbree	58,000	21,198	79,197
Adrian Jones	45,000	21,198	66,197
Stanley N. Lapidus	91,500	21,198	112,698
Seymour Liebman	40,000	21,198	61,197

- (1) Messrs. Elsbree, Jones and Liebman each elected to receive his \$40,000 2019 annual retainer for board service in the form of restricted stock units and, as a result, were each issued 13,289 restricted stock units on January 1, 2019 that vested in a single installment on January 1, 2020. Amounts in this column include the value of the \$40,000 2019 annual retainer forgone in lieu of restricted stock units for each of Messrs. Elsbree, Jones and Liebman.
- (2) Represents the aggregate grant date fair value of the options computed in accordance with FASB ASC Topic 718, excluding the effect of estimated forfeitures. For a description of the assumptions used in valuing these awards, see note 8 to our audited consolidated financial statements included in our Annual Report on Form 10-K filed with the SEC on March 16, 2020.

We maintain a non-employee director compensation policy pursuant to which all non-employee directors were paid cash compensation as set forth below for 2019:

	<u>Annual Retainer (\$)</u>
Board of Directors:	
All non-employee members	40,000
Additional retainer for Lead Independent Director	30,000
Audit Committee:	
Chairperson	18,000
Membership	7,500
Compensation Committee:	
Chairperson	14,000
Membership	5,000
Nominating and Corporate Governance Committee:	
Chairperson	10,000
Membership	3,500
Technology Committee:	
Chairperson	15,000

Annual retainers are earned on a quarterly basis and paid in arrears following the end of each calendar quarter. Retainers are prorated for partial quarters of service. Each director also has the opportunity to elect to be paid the director's \$40,000 annual retainer for board service in the form of restricted stock units that vest in a single installment on January 1 of the following year.

Under the non-employee director compensation policy for 2019, each non-employee director initially appointed or elected to the Board of Directors is granted an option to purchase 66,176 shares of our common stock on the date he or she first becomes a non-employee director. The option vests and becomes exercisable in substantially equal installments on each of the first three anniversaries of the date of grant, subject to the director's continued service on the Board of Directors. Prior to the amendment of the program in February 2019, the Board of Directors was also able to elect, prior to the date of the annual stockholder meeting, to make equity awards under the program in the form of (i) an option to purchase 17,647 shares of common stock, (ii) 9,000 restricted stock units, or (iii) a combination thereof. These awards vest (i) if an option, in 12 substantially equal monthly installments following the date of grant and (ii) if a restricted stock unit, in a single installment on the first anniversary of the grant date, subject to the director's continued service on the Board of Directors.

In February 2019, the non-employee director compensation program was amended to allow the Board of Directors to elect, prior to the date of the annual stockholder meeting, to make annual equity awards under the program in the form of (i) an option to purchase 22,000 shares of our common stock, (ii) 11,000 restricted stock units on the date of such annual meeting or (iii) a combination thereof. In the event that no election is made, each non-employee director receives an option to purchase 22,000 shares of our common stock. The vesting schedules of such option and restricted stock unit awards remained unchanged from our prior program. On the date of the 2019 annual meeting of stockholders, each continuing non-employee director was granted an option to purchase 22,000 shares of common stock that vest in one installment on the first anniversary of the grant date, subject to the director's continued service on the Board of Directors.

Compensation Committee Interlocks and Insider Participation

During 2019, Mr. Lapidus, Mr. Cumming and Mr. Jones served as a member of our compensation committee. None of these individuals was at any time during the fiscal year ended December 31, 2019 one of our officers or employees or had any relationship requiring disclosure under Item 404 of Regulation S-K, and none was a former officer of the Company. None of our executive officers currently serves, or in the past fiscal year has served, as a member of the Board of Directors or compensation committee of any entity that has one or more executive officers serving on our Board of Directors or compensation committee.

Item 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

EQUITY COMPENSATION PLAN INFORMATION

The following table provides information on our equity compensation plans as of December 31, 2019.

<u>Plan Category</u>	<u>Number of Securities to be Issued Upon Exercise of Outstanding Options, and Rights</u>	<u>Weighted Average Exercise Price of Outstanding Options, and Rights</u>	<u>Number of Securities Available for Future Issuance Under Equity Compensation Plans</u>
Equity compensation plans approved by security holders (1)	6,742,338(2)	\$ 5.22(3)	680,186(4)
Equity compensation plans not approved by security holders (5)	906,500	3.34	717,000
Total	7,648,838	\$ 4.95	1,397,186

- (1) Consists of the 2006 Employee, Director and Consultant Stock Plan, or the 2006 Plan, the 2014 Incentive Award Plan, as amended and restated, or the 2014 Plan, and the Employee Stock Purchase Plan, or ESPP. We ceased issuing new awards under the 2006 Plan when the 2014 Plan became effective.
- (2) Consists of 1,149,778 outstanding options to purchase shares of our common stock under the 2006 Plan, 4,297,052 outstanding options to purchase shares of our common stock under the 2014 Plan, and 1,295,508 outstanding restricted stock units under the 2014 Plan.
- (3) Represents the weighted-average exercise price of options under the 2014 Plan and 2006 Plan as of December 31, 2018. Amounts shown do not take into account any restricted stock units awarded under the 2014 Plan, which do not have an exercise price.
- (4) Pursuant to the terms of the 2014 Plan, the number of shares of common stock available for issuance under the 2014 Plan automatically increases on January 1 of each year during the current ten year term of the 2014 Plan, beginning on January 1, 2015. The annual increase in the number of shares is currently equal to the lesser of: (a) 4% of our shares of common stock outstanding (on an as-converted basis) on the final day of the immediately preceding calendar year; and (b) such smaller number of shares of common stock determined by the Board of Directors. Pursuant to the terms of the ESPP, the number of shares of common stock available for issuance under the ESPP automatically increases on the first day of each calendar year beginning January 1, 2015 and ending on January 1, 2024. The annual increase in the number of shares is currently equal to the least of: (1) 220,588 shares, (2) 1% of the common shares outstanding on the final day of the immediately preceding calendar year and (3) such smaller number of common shares as determined by the Board of Directors. As of December 31, 2019, a total of 142,432 shares of stock were available for issuance under the ESPP, all of which were subject to purchase with respect to the purchase period in effect as of December 31, 2019, which purchase period ends on May 15, 2020.
- (5) Consists of the Inducement Award Plan. See Note 8 to our audited consolidated financial statements included in our Annual Report on Form 10-K filed with the SEC on March 16, 2020 for a description of the material features of the plan.

SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

The following table sets forth certain information regarding beneficial ownership of our common stock as of April 15, 2020, for: each person known to us to be the beneficial owner of more than five percent of our outstanding common stock; each of our named executive officers; each of our directors and nominees; and all of our directors and executive officers as a group.

Beneficial ownership is determined in accordance with the rules of the SEC and generally includes voting or investment power with respect to securities. Except as noted by footnote, and subject to community property laws where applicable, we believe based on the information provided to us that the persons and entities named in the table below have sole voting and investment power with respect to all shares of our common stock shown as beneficially owned by them.

The table lists applicable percentage ownership based on 119,172,630 shares of our common stock outstanding as of April 15, 2020. The number of shares beneficially owned includes shares of our common stock that each person has the right to acquire within 60 days of April 15, 2020, except as noted in the footnotes below, including upon the exercise of stock options and vesting of restricted stock units. These stock

options and restricted stock units shall be deemed to be outstanding for the purpose of computing the percentage of outstanding shares of our common stock owned by such person but shall not be deemed to be outstanding for the purpose of computing the percentage of outstanding shares of our common stock owned by any other person.

Name of Beneficial Owner	Number of Shares Beneficially Owned	Percentage of Class	
5% or Greater Stockholders			
Entities affiliated with Canon U.S.A., Inc. (1)	6,193,514	5.2	%
Named Executive Officers and Directors			
John McDonough (3)	1,651,445	1.4	%
Thomas J. Lowery, Ph.D. (4)	333,610	*	
Alec Barclay (5)	210,982	*	
Adrian Jones (2)	4,346,629	3.6	%
Michael J. Cima, Ph.D. (6)	383,118	*	
John W. Cumming (7)	147,050	*	
David B. Elsbree (8)	214,551	*	
Stanley N. Lapidus (9)	166,183	*	
Seymour Liebman (1)	6,193,514	5.2	%
John Sperzel (10)	312,500	*	
All executive officers and directors as a group (11 persons) (11)	14,506,224	12.2	%

* Less than 1%.

- (1) Based on information set forth in a Schedule 13D filed with the SEC by Canon U.S.A., Inc. on September 21, 2016, this includes 6,055,341 shares held by Canon U.S.A., Inc. Mr. Seymour Liebman is the Executive Vice President, Chief Administrative Officer and General Counsel of Canon U.S.A., Inc. and the Senior Managing Executive Officer of Canon Inc., Japan, and Chairman of the Board of BriefCam, a Canon, Inc. company and may be deemed to have beneficial ownership of the shares held by Canon U.S.A., Inc. Canon U.S.A., Inc. and Mr. Liebman each disclaim beneficial ownership of the shares held directly or indirectly by Canon U.S.A., Inc., except to the extent of its pecuniary interest therein, if any. On September 21, 2016, 66,176 options were granted to Mr. Liebman, in connection with Mr. Liebman becoming a member of our Board of Directors, on June 2, 2017, 18,000 restricted stock units were granted to Mr. Liebman, on January 1, 2018, 9,708 restricted stock units were granted to Mr. Liebman, on June 8, 2018, 9,000 restricted stock units were granted to Mr. Liebman, on January 1, 2019, 13,289 restricted stock units were granted to Mr. Liebman, and on June 7, 2019, 22,000 options were granted to Mr. Liebman, of which 22,000 options will be immediately exercisable within 60 days of April 15, 2020. The mailing address of the beneficial owner is One Canon Park, Melville, New York 11747.
- (2) Based solely on information set forth in a Schedule 13G/A filed with the SEC by the Goldman Sachs Group, Inc. on February 12, 2020, this includes (a) 3,492,083 shares of common stock held by Broad Street Principal Investments, L.L.C., (b) 515,497 shares of common stock held by Bridge Street 2013 Holdings, L.P. (c) 149,660 shares of common stock held by MBD 2013 Holdings, L.P., and (d) 167,389 shares of common stock held by all other (that may or may not be vested or exercisable within 60 days), collectively the GS Entities. The GS Entities, of which affiliates of the Goldman Sachs Group, Inc. are the general partner, managing general partner or investment manager, share voting and investment power with certain of its respective affiliates. Mr. Adrian Jones is a Managing Director of Goldman, Sachs & Co. and may be deemed to have beneficial ownership of the shares held by the GS Entities. The Goldman Sachs Group, Inc., Goldman, Sachs & Co. and Mr. Jones each disclaim beneficial ownership of the shares held directly or indirectly by the GS Entities, except to the extent of its pecuniary interest therein, if any. Mr. Jones has sole and direct voting interest in 88,176 shares of common stock which Mr. Jones has the right to acquire pursuant to outstanding stock options which are, or will be, immediately exercisable within 60 days of April 15, 2020. The address of the GS Entities, the Goldman Sachs Group, Inc., Goldman, Sachs & Co. and Mr. Jones is c/o The Goldman Sachs Group, 200 West Street, New York, New York 10282.
- (3) Consists of (a) 489,114 shares of common stock and (b) options to purchase 1,162,331 shares of common stock which Mr. McDonough has the right to acquire pursuant to outstanding stock options which are, or will be, immediately exercisable within 60 days of April 15, 2020.
- (4) Consists of (a) 68,994 shares of common stock and (b) options to purchase 264,616 shares of common stock which Dr. Lowery has the right to acquire pursuant to outstanding stock options which are, or will be, immediately exercisable within 60 days of April 15, 2020.
- (5) Consists of (a) 46,294 and (b) options to purchase 164,688 shares of common stock shares of common stock which Mr. Barclay has the right to acquire pursuant to outstanding stock options which are, or will be, immediately exercisable within 60 days of April 15, 2020.

- (6) Consists of (a) 213,178 shares of common stock and (b) options to purchase 169,940 shares of common stock which Dr. Cima has the right to acquire pursuant to outstanding stock options which are, or will be, immediately exercisable within 60 days of April 15, 2020.
- (7) Consists of (a) 23,580 shares of common stock and (b) options to purchase 123,470 shares of common stock which Mr. Cumming has the right to acquire pursuant to outstanding stock options which are, or will be, immediately exercisable within 60 days of April 15, 2020.
- (8) Consists of (a) 91,081 shares of common stock and (b) options to purchase 123,470 shares of common stock which Mr. Elsbree has the right to acquire pursuant to outstanding stock options which are, or will be, immediately exercisable within 60 days of April 15, 2020.
- (9) Consists of (a) 53,010 shares of common stock and (b) options to purchase 113,173 shares of common stock which Mr. Lapidus has the right to acquire pursuant to outstanding stock options which are, or will be, immediately exercisable within 60 days of April 15, 2020.
- (10) Consists of (a) options to purchase 312,500 shares of common stock which Mr. Sperzel has the right to acquire pursuant to outstanding stock options which are, or will be, immediately exercisable within 60 days of April 15, 2020.
- (11) Consists of (a) 11,364,623 shares of common stock and (b) 3,069,604 shares of common stock which our directors and executive officers as a group have the right to acquire pursuant to outstanding stock options which are, or will be, immediately exercisable within 60 days of April 15, 2020.

Item 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

Policies for Approval of Related Person Transactions

We have adopted a written policy that transactions with directors, officers and holders of 5% or more of our voting securities and their affiliates, or each, a related party, must be approved by our audit committee or another independent body of our Board of Directors. All related party transactions shall be disclosed in our applicable filings with the SEC as required under SEC rules.

Transactions with Related Persons

Based on a review of the transactions and arrangements between us and any related person or related person's affiliate, we describe below the transactions or arrangements since January 1, 2018 in which any related person or related person affiliate has a direct or indirect material interest and the amount involved exceeds \$120,000.

Co-Development Agreement. On February 3, 2015, we entered into a Co-Development Partnership Agreement with Canon U.S. Life Sciences, Inc. ("Canon US Life Sciences") to develop a diagnostic test panel to rapidly detect Lyme disease. Canon US Life Sciences is an affiliate of Canon U.S.A., Inc., which acquired greater than 5% of our voting securities on September 21, 2016. Under the terms of the agreement, we received an upfront payment of \$2.0 million from Canon US Life Sciences and the agreement included an additional \$6.5 million of consideration upon achieving certain development and regulatory milestones for total aggregate payments of up to \$8.5 million. Of the additional \$6.5 million of consideration, we received \$3.5 million related to the achievement of two milestones. We recorded revenue of \$0.5 million for the year ended December 31, 2019. As of December 31, 2019, all revenue related to the Co-Development Agreement has been recognized.

Indemnification Agreements with Executive Officers and Directors. We have entered into an indemnification agreement with each of our directors and executive officers. These indemnification agreements and our certificate of incorporation and our bylaws indemnify each of our directors and officers to the fullest extent permitted by the DGCL. See the "*Limitation of Liability and Indemnification Agreements*" section for further details.

Limitation of Liability and Indemnification Agreements We have adopted provisions in our certificate of incorporation and bylaws that limit or eliminate the personal liability of our directors to the fullest extent permitted by the DGCL, as it now exists or may in the future be amended.

Consequently, a director will not be personally liable to us or our stockholders for monetary damages or breach of fiduciary duty as a director, except for liability for:

- any breach of the director's duty of loyalty to us or our stockholders;
- any act or omission not in good faith or that involves intentional misconduct or a knowing violation of law;
- any unlawful payments related to dividends or unlawful stock purchases, redemptions or other distributions; or
- any transaction from which the director derived an improper personal benefit.

These limitations of liability do not alter director liability under the federal securities laws and do not affect the availability of equitable remedies such as an injunction or rescission.

In addition, our bylaws provide that:

- we will indemnify our directors, officers and, in the discretion of our Board of Directors, certain employees to the fullest extent permitted by the DGCL, as it now exists or may in the future be amended; and
- we will advance reasonable expenses, including attorneys' fees, to our directors and, in the discretion of our Board of Directors, to our officers and certain employees, in connection with legal proceedings relating to their service for or on behalf of us, subject to limited exceptions.

We have entered into indemnification agreements with each of our directors and executive officers. These agreements provide that we will indemnify each of our directors, such executive officers and, at times, their affiliates to the fullest extent permitted by Delaware law. We will advance expenses, including attorneys' fees (but excluding judgments, fines and settlement amounts), to each indemnified director, executive officer or affiliate in connection with any proceeding in which indemnification is available and we will indemnify our directors and officers for any action or proceeding arising out of that person's services as a director or officer brought on behalf of us and/or in furtherance of our rights. Additionally, each of our directors may have certain rights to indemnification, advancement of expenses and/or insurance provided by their affiliates, which indemnification relates to and might apply to the same proceedings arising out of such director's services as a director referenced herein. Nonetheless, we have agreed in the indemnification agreements that our obligations to those same directors are primary and any obligation of the affiliates of those directors to advance expenses or to provide indemnification for the expenses or liabilities incurred by those directors are secondary.

We also maintain general liability insurance which covers certain liabilities of our directors and officers arising out of claims based on acts or omissions in their capacities as directors or officers, including liabilities under the Securities Act.

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

Independence of the Board of Directors

Board Leadership and Independence. Our Board of Directors has determined that all members of the Board of Directors, except John McDonough, John Sperzel and Seymour Liebman, are independent, as determined in accordance with Nasdaq rules. In making such independence determination, the Board of Directors considered the relationships that each such non-employee director has with us and all other facts and circumstances that the Board of Directors deemed relevant in determining their independence, including the beneficial ownership of our capital stock by each non-employee director. In considering the independence of the directors listed above, our Board of Directors considered the association of our directors with the holders of more than 5% of our common stock. There are no family relationships among any of our directors or executive officers.

The positions of our Chairman of the Board, or Lead Independent Director, and Chief Executive Officer are presently separated. Separating these positions allows our Chief Executive Officer to focus on our day-to-day business, while allowing the Chairman of the Board, or Lead Independent Director, to lead the Board of Directors in its fundamental role of providing advice to and independent oversight of management. Our Board of Directors recognizes the time, effort and energy that the Chief Executive Officer must devote to his position in the current business environment, as well as the commitment required to serve as our Chairman or Lead Independent Director, particularly as the Board of Directors' oversight responsibilities continue to grow. Our Board of Directors also believes that this structure ensures a greater role for the non-management directors in the oversight of our company and active participation of the independent directors in setting agendas and establishing priorities and procedures for the work of our Board of Directors. Our Board of Directors believes its administration of its risk oversight function has not affected its leadership structure. Although our bylaws do not require our Chairman, or Lead Independent Director, and Chief Executive Officer positions to be separate, our Board of Directors believes that having separate positions is the appropriate leadership structure for us at this time.

Item 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

The following table sets forth fees billed for professional audit services and other services rendered to us by BDO, our independent registered public accounting firm, and its affiliates for the fiscal years ended December 31, 2018 and December 31, 2019.

	<u>Fiscal 2018</u>	<u>Fiscal 2019</u>
Audit Fees	\$ 487,010	\$ 865,084
Tax Fees	56,965	43,400
Total	\$ 543,975	\$ 908,484

Audit Fees. Audit fees consist of fees billed for professional services performed by BDO for the audit of our annual consolidated financial statements, the review of interim consolidated financial statements, and related services that are normally provided in connection with registration statements.

Tax Fees. Tax fees consist of fees for professional services, including tax consulting and compliance performed by BDO.

Audit Committee Pre-Approval of Audit and Non-Audit Services

It is the policy of our audit committee that all services to be provided by our independent registered public accounting firm, including audit services and permitted audit-related and non-audit services, must be approved in advance by our audit committee.

All BDO services and fees in the fiscal year ended December 31, 2019 were pre-approved by the audit committee.

PART IV .

Item 15. EXHIBITS, FINANCIAL STATEMENTS AND SCHEDULES

INDEX TO EXHIBITS

Exhibit Number	Description of Exhibit
4.4*	Description of Securities Registered under Section 12 of the Securities Exchange Act of 1934.
31.3*	Certification of principal executive officer pursuant to Rule 13a-14(a) and 15d-14(a) of the Securities Exchange Act of 1934, as amended.
31.4*	Certification of principal financial officer pursuant to Rule 13a-14(a) and 15d-14(a) of the Securities Exchange Act of 1934, as amended.

* Filed herewith

SIGNA TURES

Pursuant to the requirements of the Section 13 or 15(d) of the Securities Exchange Act of 1934, as amended, the Registrant has duly caused this Report to be signed on its behalf by the undersigned, thereunto duly authorized, on April 29, 2020.

T2 BIOSYSTEMS, INC.

By: _____ /S/ JOHN SPERZEL
Name: **John Sperzel**
Title: **President, Chief Executive Officer and Director**
(principal executive officer)

April 29, 2020

By: _____ /S/ JOHN M. SPRAGUE
Name: **John M. Sprague**
Title: **Chief Financial Officer**
(principal financial officer and principal
accounting officer)

April 29, 2020

**DESCRIPTION OF THE REGISTRANT'S SECURITIES
REGISTERED UNDER SECTION 12 OF THE EXCHANGE ACT**

General

As of December 31, 2019 T2 Biosystems, Inc. had one class of securities registered under Section 12 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"). References herein to "we," "us," "our" and the "Company" refer to T2 Biosystems, Inc. and not to any of its subsidiaries.

The following description of our common stock and certain provisions of our amended and restated certificate of incorporation (our "charter") and amended and restated bylaws ("bylaws") are summaries and are qualified in their entirety by reference to the full text of our amended and restated certificate of incorporation and our amended and restated bylaws, each of which have been publicly filed with the Securities and Exchange Commission (the "SEC"). We encourage you to read our amended and restated certificate of incorporation and our amended and restated bylaws and the applicable provisions of the Delaware General Corporation Law (the "DGCL") for additional information.

Common Stock

Our board of directors is authorized to direct us to issue up to 200,000,000 shares of common stock, \$0.001 par value. Holders of our common stock are entitled to one vote for each share held of record on all matters submitted to a vote of shareholders and do not have any cumulative voting rights. An election of directors by our stockholders is determined by a plurality of the votes cast by the stockholders entitled to vote in the election. Subject to the supermajority votes for some matters, other matters are decided by the affirmative vote of our stockholders having a majority in voting power of the votes cast by the stockholders present or represented and voting on such matter. Our directors may be removed only for cause and only by the affirmative vote of the holders of at least two-thirds in voting power of the outstanding shares of capital stock entitled to vote thereon. In addition, the affirmative vote of the holders of at least two-thirds in voting power of the outstanding shares of capital stock entitled to vote thereon is required to amend or repeal, or to adopt any provision inconsistent with, several of the provisions of our restated certificate of incorporation.

Dividend

Holders of our common stock are entitled to receive proportionately any dividends as may be declared by the board of directors, subject to any preferential dividend rights of any outstanding preferred stock that we may designate and issue in the future. The Company has not paid cash dividends on any of its shares of capital stock.

Other Rights and Preferences

Our common stock has no preemptive, subscription, redemption or conversion rights or sinking fund provisions.

Liquidation

In the event of our liquidation or dissolution, the holders of common stock are entitled to receive proportionately our net assets available for distribution to stockholders after the payment of all debts and other liabilities and subject to the prior rights of any outstanding preferred stock.

Fully Paid and Non-Assessable

All outstanding shares of common stock are fully paid and non-assessable.

Preferred Stock

Our board of directors is authorized to direct us to issue up to 10,000,000 shares of preferred stock in one or more series without shareholder approval. Our board of directors has the discretion to determine the rights, preferences, privileges and restrictions, including voting rights, dividend rights, conversion rights, redemption privileges and liquidation preferences, of each series of preferred stock.

The purpose of authorizing our board of directors to issue preferred stock and determine its rights and preferences is to eliminate delays associated with a stockholder vote on specific issuances. The issuance of preferred stock, while providing flexibility in connection with possible acquisitions, future financings and other corporate purposes, could have the effect of making it more difficult for a third party to acquire, or could discourage a third party from seeking to acquire, a majority of our outstanding voting stock.

Staggered Board

Our board of directors is divided into three classes. The directors in each class serve for a three year term, one class being elected each year by our stockholders. This system of electing and removing directors may tend to discourage a third party from making a tender offer or otherwise attempting to obtain control of us, because it generally makes it more difficult for stockholders to replace a majority of the directors.

Anti-Takeover Effects of Delaware Law

We are subject to the provisions of Section 203 of the Delaware General Corporation Law. Under Section 203, we would generally be prohibited from engaging in any business combination with any interested stockholder for a period of three years following the time that this stockholder became an interested stockholder unless:

- prior to this time, the board of directors of the corporation approved either the business combination or the transaction that resulted in the stockholder becoming an interested stockholder;
- upon consummation of the transaction that resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding shares owned by persons who are directors and also officers, and by employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or
- at or subsequent to such time, the business combination is approved by the board of directors and authorized at an annual or special meeting of stockholders, and not by written consent, by the affirmative vote of at least 66 2/3% of the outstanding voting stock that is not owned by the interested stockholder.

Under Section 203, a “business combination” includes:

- any merger or consolidation involving the corporation and the interested stockholder;
- any sale, transfer, pledge or other disposition of 10% or more of the assets of the corporation involving the interested stockholder;
- any transaction that results in the issuance or transfer by the corporation of any stock of the corporation to the interested stockholder, subject to limited exceptions;
- any transaction involving the corporation that has the effect of increasing the proportionate share of the stock of any class or series of the corporation beneficially owned by the interested stockholder; or
- the receipt by the interested stockholder of the benefit of any loans, advances, guarantees, pledges or other financial benefits provided by or through the corporation.

In general, Section 203 defines an interested stockholder as an entity or person beneficially owning 15% or more of the outstanding voting stock of the corporation and any entity or person affiliated with or controlling or controlled by such entity or person.

CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER PURSUANT TO
SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, John Sperzel, certify that:

1. I have reviewed this Amendment No. 1 to the Annual Report on Form 10-K/A of T2 Biosystems, Inc. for the year ended December 31, 2019;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: April 29, 2020

By: /s/ John Sperzel
John Sperzel
President, Chief Executive Officer and Director

CERTIFICATION OF PRINCIPAL FINANCIAL OFFICER PURSUANT TO
SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, John Sprague, certify that:

1. I have reviewed this Amendment No. 1 to the Annual Report on Form 10-K/A of T2 Biosystems, Inc. for the year ended December 31, 2019;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: April 29, 2020

By: /s/ John M. Sprague

John M. Sprague
Principal Financial Officer