



**FY2021 ANNUAL REPORT
OF THE
MARYLAND LIFE SCIENCES ADVISORY BOARD
As Required by Economic Development Article
Section 3-205**

Respectfully submitted to the General Assembly of Maryland by

Secretary Kelly M. Schulz

Maryland Department of Commerce

401 East Pratt Street

Baltimore, MD 21202

December 2021



Larry Hogan, Governor | Boyd Rutherford, Lt. Governor

OPEN *for* **Business**

Introduction

The Life Sciences Advisory Board (LSAB) was established by Chapter 304, Acts of 2007, for the purpose of maintaining Maryland's preeminence in the life sciences industry. The function of the Board is to provide strategic guidance on activities that focus on:

- Promoting life sciences research, development, commercialization and manufacturing in Maryland;
- Fostering collaboration and coordination among life science organizations in Maryland, including federal laboratories and research institutions of higher education;
- Coordinating state and federal resources to attract private sector investment and job creation in the life sciences; and
- Addressing critical needs of the life sciences industry, including access to venture capital as well as a diverse and talented workforce.

Fiscal Year 2021 Board Composition

The current LSAB was appointed by Governor Larry Hogan on July 1, 2019 to serve a two-year term. The Board consists of the following members:

Chair: Jay A. Perman, M.D., – *Chancellor, University System of Maryland*

Vice Chair: *Vacant*

Appointed Members: Christopher P. Austin, M.D. – *Director, National Center for Advancing Translational Sciences, U.S. National Institutes of Health**
Richard A. Bendis – *President and CEO, BioHealth Innovation, Inc.*
Jarrod Borkat – *Vice President, Corporate Strategy, Emergent BioSolutions*
Rebecca Fisher, Ph.D., Deputy Director, Congressionally Directed Medical Research Programs – U.S. Army Medical Research and Development Command*
Jesse Christopher – *CEO, Longevity Neuro Solutions*
William Hearl – *President and CEO, Immunomic Therapeutics, Inc.*
Laurie Locascio, Ph.D. – *Vice President of Research, University of Maryland, College Park*
Theodore J. Olsen – *President and CEO, PathSensors, Inc.*
Wendy Perrow, MBA – *CEO, Oncogenomics, LLC*
Saifur Rahman, PhD, MBA – *Frederick National Laboratory for Cancer Research**
Sanjay K. Rai, Ph.D. – *Chief Academic Officer and Senior Vice President for Academic Affairs, Montgomery College*
Martin Rosendale – *CEO, Maryland Technology Council*
Joseph F. Sanchez, Ph.D., MBA – *Director, North America R&D Science Engagement, AstraZeneca*
Brian Stamper – *Director of Manufacturing, Kite Pharma*
Robert Storey – *Principal, The MVR Company*

Frank F. Weichold, M.D., Ph.D. – *Director, Critical Path and Regulatory Science Initiatives, Office of the Commissioner, U.S. Food and Drug Administration*

Christy Wyskiel – *Senior Advisor to the President and Head of Johns Hopkins Technology Ventures, Johns Hopkins University*

Standing Members: Kelly M. Schulz – *Secretary, Maryland Department of Commerce*
Arti Santhanam, Ph.D. – *Executive Director, MII, TEDCO*

** These members rotated on or off during the duration of the fiscal year*

Fiscal Year 2021 Board Activities

LSAB's activities focused on the following priorities: 1) raising awareness of Maryland's life sciences assets and resources; 2) increasing access to capital for early-stage life sciences companies; and 3) improving connectivity among the local workforce and the growing life sciences industry. The four meetings served as a forum for exchange of information relevant to the community. The group discussed available federal and state funding opportunities for local organizations; reviewed industry and academic response to the COVID-19 pandemic; learned of regional activities such as Connected DMV's Global Pandemic Prevention and Biodefense Center (see meeting minutes in Appendix I). In addition, the LSAB submitted a letter of support for SB 19, Economic Development – Biotechnology Investment Incentive Tax Credit Program – Alterations (see Appendix II).

The LSAB established a task force on biotech workforce development, in partnership with the Maryland Tech Council. Co-chaired by Joseph Sanchez and Brian Stamper, this group aims to address the workforce needs of a rapidly growing Maryland life sciences cluster. The task force's goal is to provide a forum for frank conversations among industry leaders and institutions of higher education about demand and supply of talent for the foreseeable future. This open dialog will help identify needs, manage expectations, and clarify the roles and responsibilities of each stakeholder. This effort will strengthen partnerships across the Maryland life sciences cluster and can serve as a pilot for other industries. The task force has met several times throughout the year and the co-chairs provided periodic updates at the LSAB meetings. By the end of the fiscal year, data gathering and solutioning stages of the effort have been completed. Proposed solutions fall into three major work streams: 1) high-touch engagement; 2) experiences; and 3) marketing and resources. The task force is working on implementing these solutions in fiscal year 2022.

Appendix I - LSAB Meetings Minutes

Monday, March 1, 2021

1:00 P.M. – 3:00 P.M.

(Virtual)

Welcome and Introductions

Dr. Perman gave opening remarks and reviewed the ground rules of a virtual meeting. He called the meeting to order and carried out roll call to confirm attendance.

Board Members in Attendance

- Jay Perman, MD, Chancellor – University System Maryland [Chair]
- Richard A. Bendis, President and CEO – BioHealth Innovation Inc.
- Jarrod Borkat, Vice President Corporate Strategy – Emergent Biosolutions
- Jesse Christopher, MBA, CEO – Longevity Neuro Solutions
- Rebecca Fisher, Ph.D., Deputy Director, Congressionally Directed Medical Research Programs – U.S. Army Medical Research and Development Command
- Laurie E. Locascio, Ph.D., Vice President for Research – University of Maryland, College and the University of Maryland, Baltimore
- Theodore J. Olsen, Principal – Neowise, LLC
- Wendy Perrow, MBA, CEO – Oncogenomics, LLC
- Sanjay K. Rai, Ph.D., Chief Academic Officer and Senior Vice President for Academic Affairs – Montgomery College
- Martin Rosendale, CEO – Maryland Technology Council
- Brian Stamper, Director of Manufacturing – Kite Pharma
- Joseph F. Sanchez, Ph.D., MBA, Director, North America R&D Science Engagement – AstraZeneca
- Bob Storey, Principal – The MVR Company
- Frank F. Weichold, M.D., Ph.D., Senior Advisor, Office of Regulatory Science and Innovation, Office of the Commissioner – U.S. Food and Drug Administration
- Christy Wyskiel, Senior Advisor to the President and Head of Johns Hopkins Technology Ventures – Johns Hopkins University
- Kelly M. Schulz, Secretary – Maryland Department of Commerce (Ex-Officio)
- Arti Santhanam, Executive Director – Maryland Innovation Initiative Program, TEDCO (Ex-Officio)

Board Members not in Attendance

- Christopher P. Austin, M.D., Director, National Center for Advancing Translational Sciences – U.S. National Institutes of Health

Department of Commerce Attendees

- Ulyana Desiderio, Ph.D. – Director, BioHealth & Life Sciences
- Heather Gramm – Senior Director, Strategic Industries & Entrepreneurship
- Tamar Osterman – Senior Business Development Representative, Carroll and Frederick Counties
- Connie Page – Administrative Associate

General Public Attendees

- Sally Allain – Johnson and Johnson Innovation, JLABS @Washington, DC
- Sarah Bauder – Connected DMV
- Ernesto Chanona, Ph.D. – CSSi LifeSciences
- Julie Cohen – Johnson and Johnson Innovation, JLABS @Washington, DC
- Karl Darin – Connected DMV
- Sherri Giorgio – Gilead
- Alex Keown – BioBuzz
- Burrell Kilmer – Connected DMV
- Michael Nestor, Ph.D. – Johnson and Johnson Innovation, JLABS @Washington, DC
- Joni Rutter, Ph.D. – NCATS, NIH (representing Dr. Chris Austin)
- J. Thomas Sadowski – University System of Maryland
- Stu Solomon – Connected DMV

Dr. Perman reminded everyone about the Board’s charge to maintain Maryland’s preeminence in the life sciences industry and gave an overview of the meeting’s agenda.

Review and Acceptance of November 20, 2020 Meeting Minutes

Dr. Perman asked for feedback on the minutes of the November 20, 2020 LSAB meeting. Hearing none, he asked for a motion to approve the minutes which was made by Dr. Sanchez and seconded by Dr. Locascio. The meeting minutes were approved unanimously.

Letter of Support for Senate Bill 19

For the record, Dr. Perman stated that this Board voted 13-yes and 3-abstain via email to submit a letter of support for Senate Bill 19 proposing alterations to one of Maryland’s tax credit programs, the Maryland Biotechnology Investment Incentive Tax Credit.

Secretary of Commerce Updates

Secretary Schulz gave a brief update on economic data. Maryland’s unemployment rate ended the year at 6.3%, down from a high of 10.1% in April. Through the end of 2020, Maryland regained 250,700, or 65%, of the nearly 390,000 jobs lost in March and April. That recovery is the best in the Mid-Atlantic Region.

Lawmakers moved quickly to pass the RELIEF Act, which provides about \$1.5 billion in additional economic relief, including all the provisions proposed by Governor Hogan and the legislature. Some of the additional business relief funding provided in the RELIEF Act will come from the Department of Commerce. The initial grant and loan programs cast a wide net and were designed to quickly provide help to a broad range of small businesses across the state. Several minimum criteria were set, but once businesses demonstrated they had been harmed by the pandemic, the grants and loans were funded first-in, first-out in the order they were received.

The RELIEF Act funding the Department of Commerce will be providing is more narrowly targeted at certain types of businesses where there is still a particular need for relief. The Department will be providing:

- \$10 million for grants up to \$9,000 for businesses in need of assistance, with priority given to those who have not received aid through the Advantage Maryland program;
- \$22 million for grants up to \$12,000 for bars and restaurants;
- \$10 million for grants up to \$25,000 for hotels;
- \$500,000 for businesses to set up online sales and help employees telework;

- \$8 million for private commuter bus operators and local transit systems;
- \$10 million in additional funding for the small, Minority, and Women-Owned Business Account

Senate Bill 19 makes changes to Maryland’s Biotechnology Investment Incentive Tax Credit that the Department believes will make the program more effective and more accessible to early-stage companies. The Secretary thanked the Board, individuals, and organizations for providing letters of support for this bill.

The Secretary also gave a brief update on vaccination progress in Maryland. Maryland has administered more than 1.1 million vaccine doses in total and is averaging over 31,000 shots per day. Its fourth mass vaccination site is expected to be up and running in Charles County by March 11. Registration is now open for our site at M&T Bank Stadium in Baltimore City.

Introduction: Johnson & Johnson Innovation

Sally Allain, Head of JLABS @ Washington, DC gave a brief presentation on Johnson & Johnson Innovation. Johnson & Johnson has been helping companies unleash their potential and creating value through innovation for more than 130 years. JLABS, the global incubator network of Johnson & Johnson Innovation, was established to connect budding life science and healthcare start-ups from Washington, DC to Shanghai to the critical resources, mentorship, community, and deal making power of Johnson & Johnson Innovation. Today, the portfolio of 700 companies have done nearly \$44B worth of deals, including 37 IPOs and 25 acquisitions. It is the largest and most diverse network of innovators for consumer health, medical devices, and pharmaceuticals. Importantly, the portfolio includes 30% of women-led and 30% of minority-led companies.

JLABS is collaborating with the Biomedical Advanced Research and Development Authority (BARDA), a component of the Office of the Assistant Secretary for Preparedness and Response in the U.S. Department of Health and Human Services, on a joint initiative called BLUE KNIGHT™. Blue Knight is dedicated to anticipating potential health security threats, activating the global innovation community, and amplifying scientific and technological advancements with the aim to prepare for and respond to our rapidly evolving global health environment.

JLABS at Washington, DC will open in March 2021. The 32,000-square foot facility on the Children’s National Research & Innovation Campus at the historic Walter Reed Army Medical Center site will be open to biotech, medical device, consumer and health technology start-ups aiming to develop new medicines, medical devices, precision diagnostics and health tech.

Members of the Board applauded Johnson & Johnson Innovation’s efforts, especially in supporting local company growth and job creation. Dr. Perman thanked the JLABS team for its commitment to promoting pediatric research. The Board offered to serve as a resource and looks forward to building meaningful collaborations with JLABS.

Global Pandemic Prevention and Biodefense Center Update

Stu Solomon, President and CEO of Connected DMV gave a brief update on the Global Pandemic Prevention and Biodefense Center. The objective of the Center is help prevent future pandemics by:

- establishing a global pandemic prevention center;
- delivering initiatives, beginning with human monoclonal antibodies;
- accelerating solutions and create a “warm ready” stockpile;
- intermediating across industry, government, academia, and community;

- quickly capturing attention and resources while pandemics are a priority; and
- reinforcing Greater Washington as a global center.

This effort is moving into a strategy phase, with the goals of:

- finalizing funding and staffing;
- launching a global steering committee;
- confirming scope and functions;
- completing a feasibility study;
- developing an integrated operating model;
- establishing strategic partnerships;
- identifying pipelines of initiatives; and
- creating a delivery plan.

University System of Maryland Pandemic Workshop Update

Dr. Locascio gave an update on the University System of Maryland Pandemic Workshops organized by the COVID Research and Innovation Task Force. The task force's mission is to leverage and mobilize system-wide research and innovation by engaging policy makers, business leaders and the entrepreneurial community addressing the COVID-19 pandemic. Members of the task force have met with industry leaders, primarily through the Maryland Tech Council, as well as with Connected DMV and state government leadership. It also engaged the system's students, faculty and entrepreneurs developing solutions to respond to the pandemic.

One of the examples of this engagement is the successful app challenge to help find solutions for COVID-19, which awarded prizes in December. The students provided their best ideas to help battle COVID fatigue and to help communicate the importance of getting vaccinated. In addition, a COVID-19 accelerator program was established to help young companies launch their ideas to aid in the pandemic. Between Baltimore and College Park, the university awarded about \$800,000 worth of seed grants to support new research projects.

The University of Maryland, Baltimore, the University of Maryland, College Park and the University of Maryland, Baltimore County held a workshop to discuss a collaborative and cohesive approach to pandemic preparedness. The workshop was a two-part series with approximately 100 participants, including community leaders. It focused on four areas:

1. Medical Countermeasures and Life Sciences (response to the rapid spread of disease, enhancements to diagnostics, countermeasures, telemedicine, etc.).
2. Business Impact and Economic Recovery (policies to respond to future pandemics, global supply chain vulnerabilities, sector-specific economic analysis, risks to business).
3. Pandemic Predicting and Tracking (monitoring and responding to potential disease, global spread, mobility, vaccine adoption).
4. Societal Impact, Community Health and Engagement (engagement of communities in containment strategies, tracking health disparities, reviewing risk communication strategies, analyzing mental health and education impact).

In the ensuing discussion, suggestions were made to connect to local community colleges as well as the Rockefeller Foundation as potential partners for some of these efforts.

LSAB-MTC Workforce Development Task Force Update and Next Steps

Dr. Sanchez and Mr. Stamper gave a short presentation updating the Board on the latest activities of the task force they co-lead. The Biotech Workforce Development Task Force is a joint effort between the LSAB and the Maryland Technology Council that aims to address the workforce needs of a rapidly growing Maryland biomanufacturing cluster.

Data-gathering stage of the project has been completed. Questions asked focused on demand/supply needs and hiring practices required to support the local biopharmaceutical industry. There is now sufficient data to conclude that the demand is increasing; that the early talent supply appears adequate; that the knowledge, skills, and abilities relevant to the industry are starting to be addressed; and that the hiring culture is skewed heavily towards 4+ year degree.

The task force concluded that the talent is not connecting with industry to meet the demand and industry is not connecting with talent to stimulate supply. The task force developed an opportunity statement: *Maryland has a robust supply of talent that can support the growing demand of the local biopharmaceutical industry. There is a need to stimulate stronger interest in industry careers by deliberately engaging diverse talent and delivering a clear value proposition of job opportunities at all career levels.* The next stage will include idea-gathering for potential solutions that would be prioritized based on most pressing needs, available resources, and strategic partnerships.

In the discussion that followed, Board members urged the task force to continue to include the younger pipeline of middle and high school students in its discussions. Mr. Storey asked whether Dr. Perman would give the Board an update on the CURE program at the next meeting as an example. Mr. Olsen gave an example of a collaboration between the Baltimore City Community College and three local high schools. Ms. Perrow described a Duke University alumni network mentoring program focused on preparing graduates for careers in the industry. Mr. Storey and others brought up the difficulties of finding talent due to the lack of central resources for companies who are hiring. Dr. Perman thanked Dr. Sanchez and Mr. Stamper for leading this important effort.

Closing Remarks

Dr. Perman thanked everyone for attending and actively participating in the meeting. The Board's next virtual meeting is scheduled for June 2, 2021, 2:00 p.m. – 4:00 p.m. Members wishing to submit items for the next meeting's agenda were asked to send them to Dr. Desiderio. Dr. Perman adjourned the meeting at 2:53 p.m.

Wednesday, June 2, 2021

2:00 P.M. – 4:00 P.M.

(Virtual)

Welcome and Introductions

Dr. Perman gave opening remarks and reviewed the ground rules of a virtual meeting. He called the meeting to order and carried out a roll call to confirm attendance.

Board Members in Attendance

- Jay Perman, MD, Chancellor – University System Maryland [Chair]
- Richard A. Bendis, President and CEO – BioHealth Innovation Inc.
- Jarrod Borkat, Vice President Corporate Strategy – Emergent Biosolutions
- Jesse Christopher, MBA, CEO – Longevity Neuro Solutions
- Rebecca Fisher, Ph.D., Deputy Director, Congressionally Directed Medical Research Programs – U.S. Army Medical Research and Development Command
- Laurie E. Locascio, Ph.D., Vice President for Research – University of Maryland, College and the University of Maryland, Baltimore
- Theodore J. Olsen, Principal – Neowise, LLC
- Wendy Perrow, MBA, CEO – Oncogenomics, LLC
- Saifur Rahman, Ph.D., MBA – Frederick National Laboratory for Cancer Research
- Sanjay K. Rai, Ph.D., Chief Academic Officer and Senior Vice President for Academic Affairs – Montgomery College
- Martin Rosendale, CEO – Maryland Technology Council
- Brian Stamper, Director of Manufacturing – Kite Pharma
- Joseph F. Sanchez, Ph.D., MBA, Director, North America R&D Science Engagement – AstraZeneca
- Frank F. Weichold, MD, Ph.D., Senior Advisor, Office of Regulatory Science and Innovation, Office of the Commissioner – U.S. Food and Drug Administration
- Christy Wyskiel, Senior Advisor to the President and Head of Johns Hopkins Technology Ventures – Johns Hopkins University
- Arti Santhanam, Ph.D., Executive Director – Maryland Innovation Initiative Program, TEDCO (Ex-Officio)

Board Members not in Attendance

- Kelly M. Schulz, Secretary – Maryland Department of Commerce (Ex-Officio)
- Bob Storey, Principal – The MVR Company

Department of Commerce Attendees

- Margia Argüello, MS, MBA – Senior Manager, Business Development, BioHealth and Life Sciences
- Ulyana Desiderio, Ph.D. – Director, BioHealth & Life Sciences
- Heather Gramm – Senior Director, Strategic Industries & Entrepreneurship
- Tamar Osterman – Senior Business Development Representative, Carroll and Frederick Counties
- Connie Page – Administrative Associate, Strategic Industries & Entrepreneurship

General Public Attendees

- Dorn Carranza, Ph.D. – U.S. Food and Drug Administration, OSEL
- Ann Ciekot – Public Policy Partners
- Sherri Giorgio – Gilead
- Pamela Metz Kasemeyer – Schwartz, Metz & Wise, P.A.
- Alex Keown – BioBuzz
- Jon Kucskar, JD – University of Maryland, Baltimore, CURE
- Travis McCready, JD – JLL

- Gia Grier McGinnis, DrPH – University of Maryland, Baltimore, CURE
- Helen Montag – Johns Hopkins Technology Ventures
- Michael Nestor, Ph.D. – JLABS
- Sashank Reddy, MD, Ph.D. – Johns Hopkins University, Johns Hopkins Technology Ventures, LifeSprout
- J. Thomas Sadowski – University System of Maryland
- Troy Stovall – TEDCO
- Adam van Bavel – BioBuzz

Dr. Perman reminded everyone about the Board’s charge to maintain Maryland’s preeminence in the life sciences industry and gave an overview of the meeting’s agenda.

Welcome and Introductions

Dr. Perman welcomed and introduced a new Board member, Dr. Saifur Rahman from the Frederick National Laboratory for Cancer Research. He also introduced a new Commerce staff member, Margia Argüello, Senior Manager, Business Development, BioHealth and Life Sciences.

Review and Acceptance of March 1, 2021, Meeting Minutes

Dr. Perman asked for feedback on the minutes of the March 1, 2021, LSAB meeting. Hearing none, he asked for a motion to approve the minutes which was made by Mr. Bendis and seconded by Mr. Borkat. The meeting minutes were approved unanimously.

Johns Hopkins Technology Ventures Update

Ms. Wyskiel gave an update on Johns Hopkins Technology Ventures (JHTV) activities. JHTV’s mission is to maximize the impact of Johns Hopkins University’s excellence in research by facilitating the translation and commercialization of discoveries into accessible technologies, products, and services for the benefit of society. JHTV has three divisions: corporate partnerships, technology transfer, and FastForward incubator. The portfolio includes more than 160 disruptive companies in the areas ranging from life sciences to engineering technology and digital health. These companies have raised more than \$2.7B in cumulative venture funding since 2014. =Dr. Reddy shared his story about starting LifeSprout, Inc., a privately held company developing novel synthetic analogues of soft tissue for reconstructive and aesthetic medicine. He described the advantages of JHTV and the University’s infrastructure that allows for flexibility for physician-scientist entrepreneurs. In the discussion that followed, Board members touched upon the importance of available space, C-level and other talent as well as entrepreneurial expertise to continue to grow the Maryland life sciences ecosystem.

Continuing Umbrella of Research Experiences (CURE) Scholars Program Update

Dr. McGinnis gave a short presentation on the University of Maryland, Baltimore CURE Scholars Program which was launched in 2015 as the first national middle school program of its kind. The program’s mission is to identify promising students in West Baltimore and prepare them for healthcare and research career opportunities. In addition, it seeks to create a pipeline of STEM experiences using new and existing resources. Participants come from neighborhoods that are largely under-resourced, with 45% of children living below poverty line and \$28,000 being the median household income. There are currently 138 active scholars recruited from three West Baltimore middle schools. Major success factors for CURE include a holistic hand-on approach, family-style culture, and progressive skill building. In the follow-up discussion, members asked how the mentors are recruited and how the industry can get engaged. The Board was very

supportive of this program, discussed possibilities of expanding it state-wide and thanked Dr. McGinnis and Mr. Kucskar for their efforts.

LSAB-MTC Workforce Development Task Force Update

Dr. Sanchez and Mr. Stamper gave an update on the Biotech Workforce Development Task Force activities, a joint effort between the LSAB and the Maryland Technology Council that aims to address the workforce needs of a rapidly growing Maryland life sciences cluster. Data gathering and solutioning stages have been completed. Proposed solutions fall into three major work streams: 1) high-touch engagement; 2) experiences; and 3) marketing and resources. Each of the working groups identified at least one priority it will focus on in the next few months. In the discussion that followed Board members expressed their continued support for this effort, especially efforts to attract a diverse workforce from across the state to careers in the life sciences industry.

Closing Remarks

Dr. Perman thanked everyone for attending and actively participating in the meeting. The Board's next meeting is scheduled for September 24, 2021, 9:00 – 11:00 a.m.; its format is to be determined. Members wishing to submit items for the next meeting's agenda should contact Dr. Desiderio. Dr. Perman adjourned the meeting at 3:35 p.m.

Friday, September 9, 2020

11:30 A.M. - 1:30 P.M.

(Virtual)

Welcome and Introductions

Dr. Perman gave opening remarks and reviewed the ground rules of a virtual meeting. He called the meeting to order and carried out rollcall to confirm attendance. Dr. Perman introduced and welcomed new Board members – Laurie Locascio, Marty Rosendale, Brian Stamper and Joe Sanchez.

Board Members in Attendance

- Jay Perman, MD, Chancellor – University System Maryland [Chair]
- Christopher P. Austin, MD, Director, National Center for Advancing Translational Sciences – U.S. National Institutes of Health
- Richard A. Bendis, President and CEO – BioHealth Innovation, Inc.
- Jarrod Borkat, Vice President Corporate Strategy – Emergent Biosolutions
- William Hearl, Ph.D., President and CEO – Immunomic Therapeutics Inc.
- Laurie Locascio, Ph.D., Vice President for Research – University of Maryland, College Park
- Theodore J. Olsen, President and CEO – PathSensors, Inc.
- Wendy Perrow, CEO – Oncogenomics, LLC
- Brian Stamper, Director of Manufacturing – Kite Pharma
- Joe Sanchez, Ph.D., Director, North America R&D Science Engagement – AstraZeneca
- Arti Santhanam, Ph.D., Executive Director, Maryland Innovation Initiative Program – TEDCO
- Kelly M. Schulz, Secretary – Maryland Department of Commerce
- Bob Storey, Principal – The MVR Company
- Sanjay K. Rai, Ph.D., Chief Academic Officer and Senior Vice President for Academic Affairs – Montgomery College

- Marty Rosendale, CEO – Maryland Tech Council

Board Members not in Attendance

- Frank F. Weichold, MD, Ph.D., Director, Critical Path and Regulatory Science Initiatives, Office of the Commissioner – U.S. Food and Drug Administration
- Christy Wyskiel, Senior Advisor to the President and Head of Johns Hopkins Technology Ventures – Johns Hopkins University

Department of Commerce Attendees

- Ernesto Chanona, Ph.D. – Senior Manager, BioHealth & Life Sciences
- Ulyana Desiderio, Ph.D. – Director, BioHealth & Life Sciences
- Heather Gramm – Senior Director, Strategic Industries & Entrepreneurship
- Jennifer LaHatte – Business Policy Analyst
- Tamar Osterman – Senior Business Development Representative, Carroll and Frederick Counties
- Connie Page – Administrative Associate
- Signe Pringle – Assistant Secretary, Division of Business and Industry Sector Development
- Allyson Redpath – Director, Entrepreneurship

General Public Attendees

- Hany Demian, Standards Executive, Office of Regulatory Science and Innovation, Office of the Commissioner – U.S. Food and Drug Administration [Representing Frank Weichold]
- Bruce DePuyt, Reporter – Maryland Matters
- Ann Ciekot, Partner – Public Policy Partners
- Sherri Giorgio, Director, State Government Affairs, Mid-Atlantic Region – Gilead
- Patrick “P.J.” Hogan, Senior Vice President – Cornerstone Government Affairs
- J. Thomas Sadowski – Vice Chancellor for Economic Development, University System of Maryland

Dr. Perman reminded everyone about the Board’s charge to maintain Maryland’s preeminence in the life sciences industry and gave an overview of the meeting’s agenda.

Secretary of Commerce Updates

Secretary Schulz welcomed everyone and thanked Dr. Perman for leading the LSAB and welcomed the new members of the Board. The Secretary gave an overview of actions taken by the state of Maryland to support its business community:

Commerce Financial Assistance Programs

The Department has approved nearly \$95M in grants of up to \$10,000 to more than 9,300 businesses and awarded loans of up to \$50,000 to nearly 1,650 businesses. The \$5M Manufacturing Grant Fund was created to assist Maryland companies start or ramp up production of personal protective equipment (PPE) such as masks, gowns and ventilator parts. To date, Commerce has approved grants of up to \$100,000 to 53 businesses, totaling \$3.8M.

Maryland State Arts Council is providing another \$3M in grants, which will include \$1M for county arts agencies, \$435,000 for the entities managing Arts and

Entertainment districts, and more than \$1.5M for organizations and independent artists. Governor Hogan also provided additional \$5M in funding for the Maryland Small Business Development Financing Authority to help economically disadvantaged small businesses that have been negatively affected by COVID-19. Commerce also secured a federal grant from the U.S. Economic Development Administration earlier this summer which will provide \$700,000 from the CARES Act to re-capitalize the Maryland Economic Adjustment Fund. These loan funds will be available to help small businesses take proactive steps to prevent COVID-19 transmission and to respond to economic injury that has resulted from the pandemic.

Maryland's Economy

Most recent jobs report shows Maryland's unemployment rate at 7.6%, which is below the national average of 10.2% and the lowest rate in the mid-Atlantic. The state saw 2.1% job growth in July, the seventh best rate in the country. Commerce's in-house economist notes that Maryland's unemployment rate fell while its labor force grew in July; conversely, the national rate fell while the labor force contracted. This indicates Maryland is in a more stable economic position than the country as a whole; not only more people are returning to work, but more people who had previously stopped looking for work are looking again.

Life Sciences and Innovation

Over 40 Maryland companies are developing and manufacturing vaccines, therapeutics and tests for COVID-19, often working hand-in-hand with research institutions like the Johns Hopkins University and the University System of Maryland. Even before the pandemic, the Department of Commerce wanted to celebrate small businesses and entrepreneurs who are bringing the boldest new ideas to the marketplace. Now the feeling is that this effort is more important than ever. Commerce's "Innovation Uncovered" campaign is using blog posts, videos, and social media promotion to highlight the most creative businesses Maryland has to offer. The centerpiece of the project will be the search for the "Maryland Future 20," a list of innovative Maryland startups with the potential to become the state's next major business success story. Nominations will be accepted through the end of September at open.maryland.gov/innovation.

Review and Acceptance of May 15, 2020 Meeting Minutes

Dr. Perman asked for feedback on the minutes of the May 15, 2020 LSAB meeting. Hearing none, he asked for a motion to approve the minutes which was made by Mr. Olsen and seconded by Mr. Borkat. The meeting minutes were approved unanimously.

Update on Federal Funding Opportunities

Dr. Austin gave an overview of federal funding that is available to Maryland companies working on research and development in response to the COVID-19 pandemic. The total amount of money dedicated to COVID-19 is well over \$20B, in addition to normally appropriated funds. Given the urgency of the pandemic, the government has been uncharacteristically fast in awarding these grants since the funding was approved in March and April. Some businesses may not be aware that they are eligible for many of these grants, contracts and other funding mechanisms.

The NIH is one of the biggest sources of federal funding; there are over 400 opportunities specific to COVID-19 at the NIH alone. However, other agencies such as the National Science

Foundation, the Department of Energy, the Department of Defense, the U.S. Department of Commerce, the National Institute of Standards and Technology, the U.S. Environmental Protection Agency, and the Department of Veterans Affairs are all participating. It is important to stay current on the opportunities available through the Department of Defense, including the Defense Advanced Research Projects Agency (DARPA) and its health-related arm, the Biomedical Advanced Research and Development Authority (BARDA), which are heavily involved in Operation Warp Speed.

Mr. Storey shared his perspective on being involved with one such federally funded program, the Rapid Acceleration of Diagnostics (RADxSM). He noted that he is one of the six portfolio executives for RADx-Tech, RADx-ATP and RADx-NEXT, which are different components of the initiative. Teams consisting of a team lead, a project facilitator, and an assistant project facilitator do initial deep dives into the company proposals. The recommendations then go to the steering panel and get approved or rejected; meanwhile the teams continue to work with the companies through different stages of development. At any given time, each team has a dozen or so projects moving through the process. The team leads are responsible for individual companies, while the portfolio executives report on a collection of projects. Maxim Biomedical, from Rockville, is so far the only Maryland company in the program.

Mr. Storey opened the floor for questions and discussion. Dr. Rai and Dr. Santhanam asked whether they could access a list of Maryland companies that are now in consideration for RADx-Next. They suggested reaching out to these companies to see if there is anything that can be done to help compete for these awards. Dr. Locascio asked Mr. Storey to speak on whether RADx will be doing community outreach to cover underserved populations. Due to the limited time left on the agenda, Mr. Storey offered to speak to Dr. Locascio offline.

Maryland Response to the COVID-19 Pandemic

Dr. Locascio gave an update on the University System of Maryland's efforts in response to the pandemic. Under the Strategic Partnership Act of 2016, the University of Maryland Baltimore (UMB) and the University of Maryland Baltimore County (UMBC) were linked under one research enterprise. Now that they will be ranked together, they make a second \$1B research enterprise in Maryland in addition to the Johns Hopkins University. Dr. Locascio noted that very few states have two research enterprises of this magnitude.

In the beginning of the pandemic, from mid-March to June, there was an immediate shut down of all clinical research, with some exceptions for COVID-19 research. Soon, the university system pivoted to creative solutions to respond to the pandemic. University of Maryland College Park (UMD) reallocated over \$700,000 in seed funds for COVID-19 research. Projects funded included improving communication during the pandemic as well as novel testing for virus transmission. UMD partnered with Carnegie Mellon University and Facebook to help collect SARS-CoV-2 data and develop a dashboard tracking transmission data across the United States. This effort helped to inform Dr. Fauci and the National Institute of Allergy and Infectious Diseases regarding research on the use of masks limiting airborne transmission of the virus. The Maryland Small Business Center has developed the Small Business Recovery and Sustainability Guide and the staff have been out in the field helping small businesses. UMB has developed statewide and national partnerships to test COVID-19 vaccine candidates.

The Johns Hopkins University has also been involved in pandemic response, including establishing a dashboard monitoring SARS-CoV-2 transmission worldwide. The Department of Defense awarded \$35M to Johns Hopkins for a clinical trial of convalescent plasma

therapy. Universities in Maryland received 30 rapid awards in the past several months, with six going to Johns Hopkins and 16 to UMD; \$42M have gone to UMB. The Chancellor formed a COVID-19 Task Force for Research and Innovation which launched an app challenge to engage students to help find solutions to the pandemic. There are also discussions of establishing a new institute on pandemic preparedness that will focus on four pillars: 1) medical countermeasures; 2) business impact and economic recovery; 3) pandemic prediction, tracking, war-gaming, vaccine adoption; and 4) societal impact, including healthcare disparities and mental health care.

Mr. Rosendale described activities of the Maryland Tech Council (MTC). When the pandemic began, the Council saw many of its members pivot immediately to support the response to the pandemic, using their own funds to evaluate their technology and therapeutic development platforms. The MTC formed a COVID-19 Coalition to help its members connect, have meaningful conversations and ask each other questions about pandemic response. The requests were straightforward, with the main needs being PPE and testing kits to achieve 100,000 tests per month. Twenty-five companies participated in the first call, with the number rising to over 40 at present all responding to the pandemic.

Over \$3B of federal funding and \$4M from Coalition for Epidemic Preparedness Innovations have been awarded to Maryland. Many companies got involved in different ways: Lockheed Martin supplied their fleet of jets for transportation and Pfizer and GSK offered their scientific expertise. The MTC was able to connect with the Naval Service Warfare Center that is manufacturing and 3D-printing masks and other PPE components. Many companies that had pivoted to producing tests needed clinical samples – the MTC worked with local universities and medical centers to help make these connections. Other companies requested clinical research support assistance. Currently the biggest issues are around logistics of vaccines and therapeutics development and distribution.

Technology companies pivoted rapidly; and with the stimulus packages coming from the state and federal government it became confusing for businesses because the rules were changing almost daily. A small group of technology companies collaborated to produce a COVID-19 Business Relief Eligibility Wizard app that has been used by over 35,000 companies to date. In addition, the MTC had changed the topic of its regular CapitalM podcast that covered access to capital in Maryland to a videocast focused on COVID-19. Over 1,000 people have tuned in for this videocast and an additional 600 people either downloaded or watched it on YouTube. The MTC has also formed the Business Continuity Task Force that helps businesses navigate the financial, pipeline and supply chain issues they may face, as well as advise on how best to prepare the offices when it's time for employees to return to work. The task force includes a network of over 150 executives and has licensed a platform created by the Massachusetts Institute of Technology; it has helped over 100 companies to date. The MTC also formed a Life Science Workforce Coalition to make sure that the industry is connected to the local talent.

Mr. Rosendale and Mr. Bendis are leading a Connected DMV work group that is looking at the response to COVID-19 and preparedness for future pandemics. The group has recently made a recommendation to create a new Pandemic Prevention and Defense Center. The Center would be a global leader on the causes of pandemics and proactively develop technologies that will position the nation to respond to future emergencies more rapidly. This idea is still in the early stages that will develop into a plan in the next six months. Mr. Bendis suggested to Dr. Locascio that the University System of Maryland should have a conversation with Connected DMV as they are both thinking about strategy

for future pandemic preparedness.

Discussion: Lessons Learned and Remaining Challenges

Dr. Rai led a discussion focused on workforce needs in the state of Maryland and the DMV region. With the expansion of testing, development of vaccines and global supply chains becoming less dependable, more manufacturing may be coming back to Maryland and the U.S. It is important to not only continue meeting the existing workforce needs but anticipate these emerging areas. Dr. Rai represents 16 community colleges in the state of Maryland who are all well-positioned to prepare the workforce. It would be important to identify talent gaps for the life sciences industry, for example biomanufacturing, and develop programs that supply this talent in the next 10-12 months.

Mr. Stamper noted that students graduating from colleges can be successful right away if in addition to having fundamental skills they understand good manufacturing practices and how to work in a regulated environment. Industry doesn't just need scientists and engineers, it needs people to work in the warehouse, people that understand finance, business systems and project management. Mr. Stamper encouraged the LSAB to collaborate with existing efforts, including the MTC Workforce Coalition. Mr. Olsen added that Dr. Rai has done an outstanding job at Montgomery College and the capabilities of the students graduating from its programs has been very impressive. PathSensors/Smiths Detection, which is in Baltimore, works closely with the Baltimore City Community College (BCCC) and the BioTech Institute. High School Connectivity is a new program that was started by the BCCC. Baltimore has a pool of very smart students, but there is lack of equipment. For example, Edmonson High School has only 20 computers in the library for 575 students. Mr. Olsen asked Dr. Rai if there is a way to help the BCCC get close to the level of Montgomery College.

There was a general discussion of the Kirwan Commission recommendations passed during the last legislative session and vetoed due to budget constraints related to the pandemic. Mr. Sadowski added that there is a need to have a clear understanding of the skills the industry requires both in short- and long-term. He also asked to keep in mind the scale of the workforce training programs as well as gaps that may exist between the two-year and the four-year institutions. Mr. Rosendale noted the importance of a diverse workforce. Secretary Schulz mentioned Baltimore's EARN program and said that there are many opportunities that are currently available for community colleges for advanced training and education. UMBC cyber security training center's "learn and earn" program was discussed as a possible model. There are many certificate opportunities and other types of individual training available throughout the state funded by the Department of Labor. She also noted that the Apprenticeship programs have grown beyond classic trade to jobs relevant to the life sciences and other technological fields. There was general agreement that the workforce development discussions need to be happening sooner rather than later and it would be paramount for the industry to be engaged right away.

Closing Remarks

Dr. Perman thanked everyone for attending and actively participating in the meeting. He thanked Dr. Desiderio and Department of Commerce staff for supporting the activities of the LSAB. Dr. Perman asked everyone to continue to celebrate Maryland's successes in responding to the pandemic. He urged the Board to collaborate with existing efforts on ensuring the life sciences industry continues to have access to a diverse and skilled workforce. The Board's next virtual meeting is scheduled for Friday, November 20, 2020 1:00 -3:00 p.m. Members wishing to submit items for the next meeting's agenda were asked to send them to Dr. Desiderio. Hearing no additional remarks from the members of the public, Dr. Perman adjourned the meeting at 1:30 p.m.

Friday, November 20, 2020
1:00 P.M. – 3:00 P.M.
(Virtual)

Welcome and Introductions

Dr. Perman gave opening remarks and reviewed the ground rules of a virtual meeting. He called the meeting to order and carried out roll call to confirm attendance. Dr. Perman introduced new Board members, Rebecca “Becky” Fisher and Jesse Christopher.

Board Members in Attendance

- Jay Perman, MD, Chancellor – University System Maryland [Chair]
- Christopher P. Austin, M.D., Director, National Center for Advancing Translational Sciences – U.S. National Institutes of Health
- Richard A. Bendis, President and CEO – BioHealth Innovation Inc.
- Jarrod Borkat, Vice President Corporate Strategy – Emergent Biosolutions
- Jesse Christopher, MBA, CEO – Longeviti Neuro Solutions
- Rebecca Fisher, Ph.D., Deputy Director, Congressionally Directed Medical Research Programs – U.S. Army Medical Research and Development Command
- William Hearl, PhD, President and CEO – Immunomic Therapeutics Inc.
- Laurie E. Locascio, Ph.D., Vice President for Research – University of Maryland, College Park
- Theodore J. Olsen, President and CEO – PathSensors, Inc./Smiths Detection
- Wendy Perrow, MBA, CEO – Oncogenomics, LLC
- Sanjay K. Rai, Ph.D., Chief Academic Officer and Senior Vice President for Academic Affairs – Montgomery College
- Martin Rosendale, CEO – Maryland Technology Council
- Brian Stamper, Director of Manufacturing – Kite Pharma
- Joseph F. Sanchez, Ph.D., MBA, Director, North America R&D Science Engagement – AstraZeneca
- Bob Storey, Principal – The MVR Company
- Frank F. Weichold, M.D., Ph.D., Director, Critical Path and Regulatory Science Initiatives, Office of the Commissioner – U.S. Food and Drug Administration
- Kelly M. Schulz, Secretary – Maryland Department of Commerce (Ex-Officio)
- Arti Santhanam, Executive Director – Maryland Innovation Initiative Program, TEDCO (Ex-Officio)

Board Member not in Attendance

- Christy Wyskiel, Senior Advisor to the President and Head of Johns Hopkins Technology Ventures – Johns Hopkins University

Department of Commerce Attendees

- Ernesto Chanona, PhD – Senior Manager, BioHealth & Life Sciences
- Ulyana Desiderio, PhD – Director, BioHealth & Life Sciences

- Heather Gramm – Senior Director, Strategic Industries & Entrepreneurship
- Connie Page – Administrative Associate
- Signe Pringle – Assistant Secretary Division of Business and Industry Sector Development
- Tamar Osterman, Senior Business Development Representative, Carroll and Frederick Counties

General Public Attendees

- Sherri Giorgio, Gilead
- Emily R. Haskell, Maryland Department of Legislative Services
- Pamela Metz Kasemeyer, Schwartz, Metz & Wise, P.A.
- Alex Keown, BioBuzz
- Troy LeMaile-Stoval, TEDCO
- J. Thomas Sadowski, University System of Maryland
- Adam Van Bavel, BioBuzz

Dr. Perman reminded everyone about the Board’s charge to maintain Maryland’s preeminence in the life sciences industry and gave an overview of the meeting’s agenda.

Review and Acceptance of September 9, 2020 Meeting Minutes

Dr. Perman asked for feedback on the minutes of the September 9, 2020 LSAB meeting. Hearing none, he asked for a motion to approve the minutes which was made by Mr. Olsen and seconded by Drs. Rai and Locascio. The meeting minutes were approved unanimously.

Secretary of Commerce Update

Secretary Schulz updated the Board on the new restrictions in Maryland due to the rise of COVID-19 cases: bars and restaurants must close from 10 p.m. to 6 a.m. except for takeout and delivery; reduced capacity for retail establishments and religious facilities to 50%; reduced capacity for sporting events. The Governor is also prohibiting visitation at hospitals and allowing hospitals that are near or at capacity to move patients to other facilities to better manage the surge. There is also restricted visitation at nursing homes as well as additional requirements for more testing for staff and residents at nursing homes.

The Secretary updated the Board on Maryland jobs and the economy. Maryland added over 10,000 jobs in October, but there is a long recovery road ahead. She noted that one of the fastest growing industries in the state is Maryland's life sciences and healthcare industries. She commented on exciting news about the effectiveness of Moderna and Pfizer vaccines and thanked the Maryland life sciences industry for their contributions to fighting the pandemic.

Governor Hogan announced last month that he is allocating another \$250M into Maryland’s COVID-19 relief efforts; this doubles the state’s commitment to half a billion dollars. These funds are broken down in very specific ways, which include new sources of funding for businesses as well as more funding to help businesses who have already applied to some of Commerce’s programs. This includes \$50M for Commerce’s Small Business COVID-19 Emergency Relief Grant Fund.

The new sources include \$50 million in direct relief for restaurants in Maryland. Commerce will be allocating those funds to the counties and Baltimore City so they can disburse the grants to their businesses. Commerce is also providing \$2M to local Destination Marketing Organizations

so they can support tourism and promote local restaurants, attractions, and shops. The Maryland State Arts Council has another \$3M to distribute and is accepting applications from arts organizations, independent artists, and county arts agencies who have experienced losses due to canceled events and operations. Finally, the Governor has set aside \$100M as an Emergency Rapid Response Fund for Small Businesses; this will allow the state to deploy these funds quickly in the future should the pandemic create additional need around the state.

Finally, Secretary Schulz updated the Board on the Innovation Uncovered initiative which aimed to identify the most innovative startups and entrepreneurs. Commerce received more than 125 nominations from around the state, and Governor Hogan announced the final list of the “Maryland Future 20” this week. The finalists were selected based on a variety of factors, including innovation, future growth potential, the company’s Maryland story, and “wow” factor. Among the Maryland Future 20 eight are life sciences companies, including: Aidar Health (Baltimore City), Clene Nanomedicine (Cecil County), pathOtrak (Prince George’s County), Relavo (Baltimore City), Sisu Global Health (Baltimore City), and Theradaptive, Inc (Frederick County).

TEDCO Updates

Troy LeMaile-Stoval spoke to the Board about TEDCO’s vision. TEDCO believes that there is a need to rethink, restart and re-engineer this economy to be more inclusive and more expansive. Thirteen companies out of “Maryland Future 20” are TEDCO portfolio companies and many of them came from the Maryland Innovation Initiative (MII) program. TEDCO believes companies like this will contribute not only to Maryland’s recovery but also ensure that the state thrives and leads in innovation. Our ecosystem must be the engine that drives this process. TEDCO’s goals include ensuring that the ecosystem is inclusive; connecting the right individuals and the right companies; and encouraging everyone to participate in this innovation culture.

Dr. Arti Santhanam presented the most recent MII annual report that can be found on TEDCO’s website. The initiative was created as a partnership between the state of Maryland and five Maryland academic research institutions. It is designed to accelerate promising technologies with significant commercial potential and leverage each institution’s strengths. Up to date, \$39M was invested, 252 projects were de-risked, 102 start-up companies were created and supported, seven companies exited, and over \$532M in follow-on funding was secured. The economic development impact can be measured in 120 created jobs with \$103K average salary and \$10M generated revenue.

Opportunities to Support Ecosystem Connectivity

Wendy Perrow gave a short presentation on resources available to entrepreneurs and shared her own experiences in successfully raising funds in the local ecosystem. She covered the following resources:

- *TEDCO* (MII, Rural Business Innovation Initiative, Builder Fund, Seed Fund, Maryland Venture Fund)
- *Maryland Momentum Fund* (Invests in pre- to late-seed stage companies affiliated with University System of Maryland (USM)’s 12 institutions across the state. Aims to accelerate the success of USM start-ups & provide capital bridge to larger financings)
- *BioHealth Capital Region Investor Forum* (Largest regional investment meeting for investors and start-ups in Maryland)
- *Blu Venture Investors* (Angel and early-stage venture investing in the DC area. Seed to Series A investments)

- *Epidarex Capital* (Funds transformative life science opportunities in emerging and under-ventured research hubs within the U.S. and the UK. Partners with leading universities and research institutions to provide capital for the most innovative ideas)
- *NEA* (Funds biotech, healthcare services/IT, medical devices. Seed, Series A, B, C investments)

In the ensuing discussion, BARDA Ventures was mentioned as well as the new Johnson and Johnson Innovations – JLABS @ Washington, DC as important local resources.

BioHealth Capital Region and Connected DMV Updates

Rich Bendis gave a short update on BioHealth Capital Region, which is ranked #4 the U.S. by JLL and Milken Institute’s State Technology and Science Index (based on NIH funding, Venture Capital funding, patents, lab space, and jobs). Maryland companies account for four of the top eight recipients of Operation Warp Speed funding and have received billions from BARDA’s COVID-19 Medical Countermeasure portfolio. In 2019, Maryland has received a record \$1.3 billion in NIH funding from 2,320 awards. Venture capital and grant funding has grown six times since 2016, setting a record in 2020 with two months remaining.

Marty Rosendale introduced Connected DMV as a non-profit 501(c)(3) organization that spun out of the Greater Washington Board of Trade. The organization is preparing several initiatives that will support the DMV region. One of such initiatives is a proposed Global Pandemic Prevention and Biodefense Center to predict future pandemics and prevent the human and economic cost. Greater Washington is the most strategic location to serve as the world’s epicenter for pandemic prevention with its more than 70 federal labs, 800 life sciences companies, the FDA, NIH/NIAID, ASPR/BARDA, DARPA, and other critical assets. It is in proximity to policy makers, government officials, and more than 175 world-wide embassies and diplomatic missions.

Comprehensive preparedness demands a public-private-academia approach. The Center will be advancing focused initiatives through an integrated model to: 1) integrate and coordinate ongoing functions across the pandemic prevention value chain; 2) originate, enable, and facilitate key initiatives that advance pandemic preparedness – initially launching AHEAD100; 3) collaborate across Federal, state, local governments, industry, academia, civil society, and the diplomatic community; and 4) constitute a public-private structure to complement and support the missions of NIH/NIAID, ASPR/BARDA, DARPA, etc. AHEAD100 is a targeted program that seeks to develop best-in-class neutralizing human monoclonal antibody solutions for the top 100 most likely causes of pandemics. The Center is currently in the strategy phase and is looking for strategic partnerships.

LSAB-MTC Workforce Development Task Force Update and Next Steps

Dr. Joe Sanchez and Brian Stamper introduced the charter of the Workforce Development Task Force. It is a joint effort between the LSAB and the Maryland Technology Council (MTC) that aims to address the workforce needs of a rapidly growing Maryland life sciences cluster. The task force’s goal is to provide a forum for frank conversations among industry and institutions of higher education about demand and supply of talent for the foreseeable future. This open dialog will help identify needs, manage expectations, and clarify the roles and responsibilities of each stakeholder. This effort will strengthen partnerships across the Maryland life sciences cluster and can serve as a pilot for other industries. The objective is to support a thriving workforce to promote the growth of Maryland’s life sciences sector. Governance oversight will be provided by the LSAB; task force co-chairs will provide periodic updates and request input at the Board’s meetings.

The task force had its first introductory meeting on November 5, 2020 to set goals and expectations. The group is currently collecting and analyzing supply and demand data through email, phone interviews and a LinkedIn discussion board. Core members of the team are Dr. Sanchez and Mr. Stamper (co-Chairs) as well as Dr. Desiderio (LSAB/Commerce) and Michelle Ferrone (MTC). The group plans to identify the challenges by early next year and begin working on a strategy to develop solutions in the spring. There was overwhelming support for this effort from the Board. Jesse Christopher and Dr. Becky Fisher volunteered to be part of the task force. Dr. Fisher also shared an additional workforce development resource to consider, the Army Educational Outreach Program.

Closing Remarks

Dr. Perman thanked everyone for attending and actively participating in the meeting. Mr. Rosendale was recognized for stepping in at the last minute to discuss the Global Pandemic Prevention and Biodefense Center. The Board's next virtual meeting will be scheduled early next year. If members wish to submit items for the next meeting's agenda, they should send them to Dr. Desiderio. Dr. Perman adjourned the meeting at 2:50 p.m.

Appendix II - Record of the Vote to Submit a Letter of Support for SB 19

January 25, 2021

The Honorable Guy Guzzone
Chair, Senate Budget and Taxation Committee
3 West Miller Senate Office Building
Annapolis, Maryland 21401

Dear Chair Guzzone,

The Maryland Life Sciences Advisory Board is submitting this letter in support of Senate Bill 19, Economic Development – Biotechnology Investment Incentive Tax Credit Program – Alterations.

The Biotechnology Investment Incentive Tax Credit is intended to foster the growth of Maryland’s biotechnology industry by incentivizing investment in early stage companies. The program’s goal is to increase: 1) the number of companies developing biotechnologies in Maryland; 2) overall investments in the biotechnology sector; and 3) the number of individual investors actively investing in Maryland’s life sciences companies.

The proposed changes would improve the ability to evaluate the effectiveness of this program by further defining its policy goals and objectives. The changes will also expand access to this popular tax credit to more companies to meet the demand that has repeatedly exceeded available funding nearly every year since it was enacted. We believe these changes will have a positive effect on Maryland’s life sciences ecosystem.

The Board supports Senate Bill 19 and requests a favorable report from the Committee.

Sincerely,

The Maryland Life Sciences Advisory Board

1. Jay Perman, MD, University System of Maryland [Chair]
2. Chris Austin, MD, National Center for Advancing Translational Sciences, U.S. National Institutes of Health
3. Rich Bendis, BioHealth Innovation
4. Jarrod Borkat, MBA, Emergent Biosolutions
5. Jesse Christopher, MBA - Longeviti Neuro Solutions
6. Rebecca Fisher, PhD - U.S. Army Medical Research and Development Command
7. Laurie Locascio, PhD, University of Maryland, College Park
8. Ted Olsen, Neowise, LLC
9. Wendy Perrow, MBA, Oncogenomics, LLC
10. Sanjay Rai, PhD, Montgomery College
11. Kelly Schulz, Secretary of Commerce (Ex-Officio)
12. Marty Rosendale, Maryland Tech Council
13. Brian Stamper, Kite Pharma
14. Joe Sanchez, AstraZeneca
15. Arti Santhanam PhD, TEDCO (Ex-Officio)
16. Bob Storey, The MVR Company
17. Frank Weichold, MD, PhD, Office of the Commissioner, U.S. Food and Drug Administration
18. Christy Wyskiel, MBA, Johns Hopkins Technology Ventures, Johns Hopkins University

Record of the vote (via e-mail)

First	Last	Institution/Company	Vote
Jay	Perman	University System of Maryland	Yes
Sanjay	Rai	Montgomery College	Yes
Christy	Wyskiel	Johns Hopkins University	Yes
Laurie	Locascio	University System of Maryland	Yes
Jesse	Christopher	Longeviti Neuro Solutions	Yes
Wendy	Perrow	Oncogenomics, LLC	Yes
Ted	Olsen	Neowise, LLC	Yes
Bob	Storey	MVR Company	Yes
Jarrold	Borkat	Emergent Biosolutions	Yes
Joseph	Sanchez	AstraZeneca	Abstain
Brian	Stamper	Kite Pharma	Yes
Rich	Bendis	BioHealth Innovation	Yes
Chris	Austin	NCATS, NIH	Abstain
Frank	Weichold	US FDA	Yes
Rebecca	Fisher	CDMRP, USAMRDC	Abstain
Martin	Rosendale	Maryland Tech Council	Yes
Arti	Santhanam	TEDCO	N/A (ex-officio)
Kelly	Schulz	Dept of Commerce	N/A (ex-officio)