



Maryland Innovation Initiative

ANNUAL REPORT



2019

Advancing innovative technologies from lab to market



LEADING INNOVATION TO MARKET

WELCOME TO THE MARYLAND INNOVATION INITIATIVE



WELCOME

THE MARYLAND INNOVATION INITIATIVE 2019 ANNUAL REPORT

- › DR. ARTI SANTHANAM, *EXECUTIVE DIRECTOR*
- › DR. JOHN GUSTIN, *ASSISTANT DIRECTOR*
- › SILVIA GONCALVES, *PROGRAM COORDINATOR*

TABLE OF CONTENTS

➤ Letter from Executive Director & Chair of the Board.....	4
➤ About MII	5
➤ Program Overview.....	6
➤ MII By The Numbers.....	7
➤ MII FY19 Portfolio Companies	10
➤ MII Portfolio Highlights	12
➤ Company Exits.....	14
➤ Company Support.....	15
➤ Community Engagement	16
➤ MII Economic Impact.....	17
➤ Who We Are	18

LETTER FROM MII EXECUTIVE DIRECTOR & CHAIR OF THE BOARD

Maryland has been long touted as one of the nation's leader in research and innovation thanks to its world-class scientific institutions and universities. The fundamental and ground-breaking research conducted in our scientific labs is the best in the world. Yet the region lags in translating this research from the lab bench to patient or market. In 2012, the State of Maryland established the Maryland Innovation Initiative (MII) to address at least one such challenge in this space – transferring promising technologies from the laboratories of the top research universities in the state to the market place through a structured innovative partnership approach. Then to maximize the positive outcomes through this initiative, the State housed the program with the Maryland Technology Development Corporation (TEDCO), the lead regional hub for funding and entrepreneurial support resources.

Since its inception, MII has grown by leaps and bounds to shape the entrepreneurial ecosystem in Maryland. As evidenced in this annual report, the MII program continues to deliver on the promise of successful technology commercialization outcomes, both for our partner universities and the state of Maryland. In fact, the MII fund was named by the 2018 Milken Institute Report as one of the programs helping Maryland retain 3rd place ranking on the State Technology and Science Index. But we couldn't have achieved this without the continued support of our legislature, our partner universities and our innovation community partners including key opinion leaders, industry collaborators and investors.

We are honored to lead the Maryland Innovation Initiative and proud of what our team has achieved these past seven years. As we look forward to the future, we intend to evolve and adapt this valuable program to match the needs of our University partners and our entrepreneurs to build a robust entrepreneurial ecosystem.



ROBERT HALLENBECK
CHAIR OF THE BOARD



DR. ARTI SANTHANAM
EXECUTIVE DIRECTOR



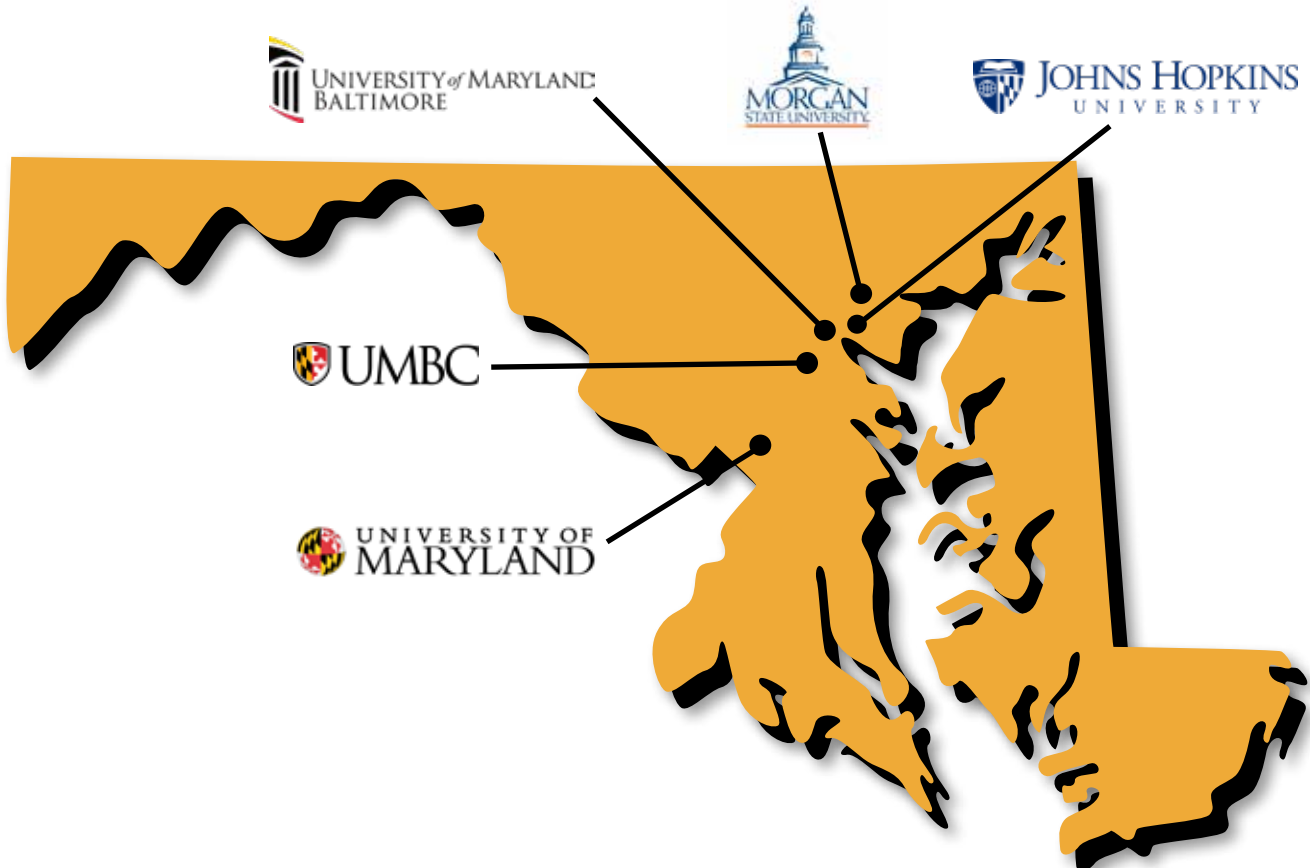
ABOUT

MARYLAND INNOVATION INITIATIVE

TEDCO is the innovation engine for the state of Maryland. TEDCO enhances economic development growth through the fostering of an inclusive entrepreneurial and innovation ecosystem.

We discover, invest in, and help build great Maryland-based, technology companies.

The MII program is TEDCO's premier early stage technology transfer and commercialization program. Established in 2012, MII is a partnership between the State of Maryland, Johns Hopkins University (JHU), Morgan State University, the University of Maryland College Park, the University of Maryland Baltimore and the University of Maryland Baltimore County. The program focuses on funding and supporting the technology transfer process for products with high-commercial upside whose research originated at one of the partner research universities. The MII program's mission is to accelerate and augment the commercialization of promising technologies from "Bench to Market" through start-up creation. The program offers grants to de-risk technologies in the university and investments to the spinouts to jump start their entrepreneurial journeys.



PROGRAM OVERVIEW

The MII Innovation Commercialization Program was created to foster the transition of promising technologies having significant commercial potential from Qualifying Universities, where they were developed, to the commercial sector to develop into products and services that meet identified market needs. The program is divided into two phases, a Technology Assessment Phase for Qualified Universities, and a Company Formation Phase, for Universities Start-ups.



➤ TECHNOLOGY ASSESSEMENT

Technology Assessment awards are available exclusively to Qualifying Universities and are capped at \$115,000 for a Technology Assessment award of a Sole Application and \$165,000 for a Technology Assessment award of a Joint Application. Projects, including all subcontracts, must be completed within 9 months of the date of execution of the award.



➤ COMPANY FORMATION

The Company Formation phase includes corporate product development in preparation for a product launch or the advancement of a product technology to achieve a commercial milestone that significantly increases the company's value and better positions the company for follow-on investment from angels or venture capitalists. MII Company Formation awards/investments are capped at \$150,000. Projects, including all subcontracts, must be completed within 9 months of the date of the award.



MII BY THE NUMBERS

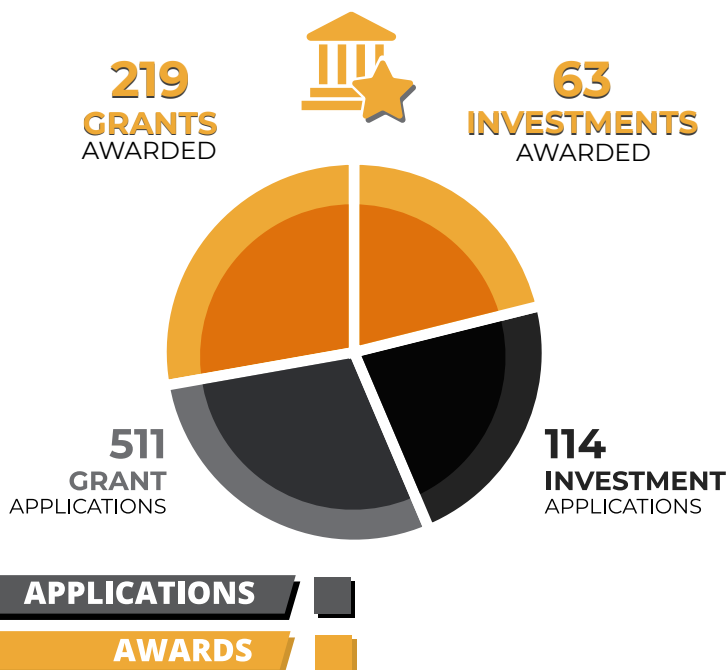
“For decades, Maryland has focused on the development and commercialization of innovative technologies from our universities and federal labs. MII’s creation in 2012 has provided commercialization projects and start-ups with funding and entrepreneurial resources never seen before. The success of the program is widely known and is competitively sought after by researchers and company executives across the state. I’m proud to serve on the authority that reviews and funds these exciting opportunities in Maryland.”



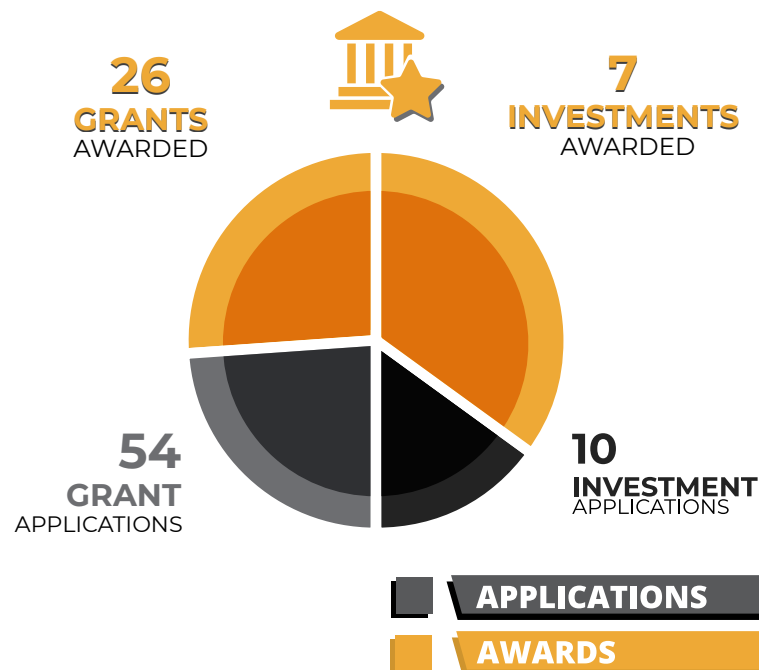
- RENEE WINSKY
President & CEO
Leadership Maryland
MII Board Member



PROGRAM TO DATE

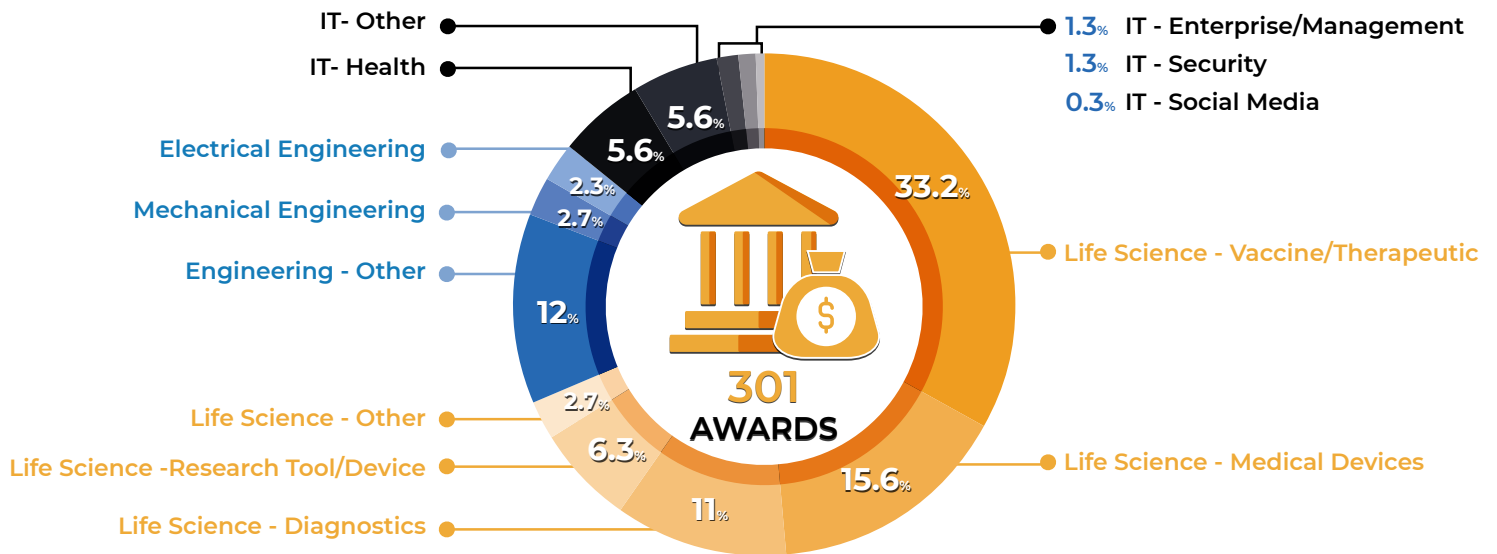


FY 2019



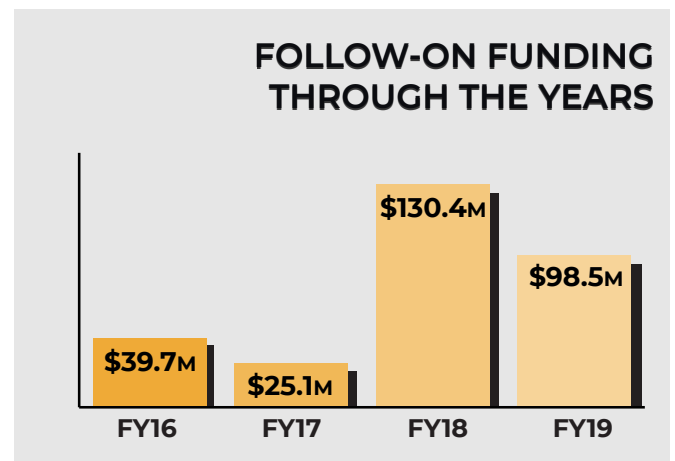
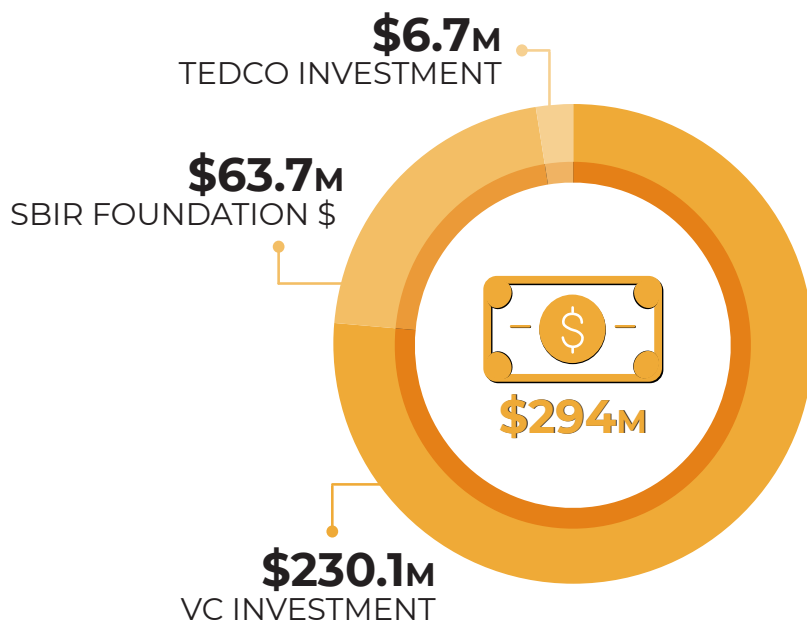
AWARDS BY TECH CLASS

MII YEAR TO DATE
2019



MII FOLLOW-ON FUNDING

PROGRAM TO DATE



PORTFOLIO MANAGEMENT

PROGRAM TO DATE



\$11.7M

TOTAL ACTIVE
MANAGED



\$4.9M

PROGRAM \$



\$6.8M

POST-PROGRAM \$

INVESTED

\$33M



SITE MINERS

13



START-UP
FORMATION

31%



EXITS



“

When I joined UMD a few years ago, I realized first-hand the power of what early stage funding such as MII can provide and worked to make sure we were maximizing our use of this program. It is an incredibly valuable catalyst for promising technologies and a key tool in helping us activate our fearless ideas for transformational impact.

”



- JULIE LENZER
Chief Innovation Officer
University of Maryland,
College Park
MII Board Member



MII FY19 PORTFOLIO COMPANIES



Mind-X Corp, located in Bethesda, is combining neurotechnology, augmented reality and artificial intelligence to create 'look-and-think' interface for next-generation spatial computing applications.



The Renalert System, located in Baltimore, provides early detection of the onset of acute kidney injury through novel analysis of a patient's urine output, blood pressure and oxygenation status.



Once the company became part of the TEDCO family through the MII program we expanded our 'Founders Network' even more and gained the additional resources and support that we needed to help us solve this big problem.



-Aaron Chang
CEO
Renalert



Sonoval, located in Baltimore, is developing a breakthrough anti-cancer biologic drug therapy for the treatment of a variety of T-cell lymphomas and major solid tumors.



OncoSTING, located in Baltimore, is developing novel bladder cancer therapies that work by combining the potency of standard BCG immunotherapy with long-lived delivery of potent STING agonists.



Bluelene®

Magic Blue, located in Bethesda, develops a skin care line using methylene blue which has been found to extend the life span of individual skin cells to improving overall skin connective tissue/wound healing.

Active Charge, LLC

ActiveCharge, LLC, located in Baltimore, is a system that can effectively harvest wasted vibrational/kinematic energy and convert it to electrical energy for battery free sensor operation in wind powered turbines.



Gardner Industries™

Gardner Industries, located in Baltimore, develops The Substate Cage™ line of research analytical tools that

enables academic and pharma researchers to make real-time rapid measurements of microbial growth and/or enzyme activity with no lag time in data acquisition.



“

The MII program is a crucial part of UMBC's technology transfer process. We absolutely need this program in order to provide the essential continuum of support to our inventors.

”



-WENDY MARTIN
Director of Technology Development
UMBC
MII Board Member

ADDITIONAL SPINOUTS

- Adarga Pharmaceuticals LLC
- Agile Life Sciences, Inc.
- AliquantumRx Inc.
- ERADA Technology Alliance Ltd
- Fzata, Inc.
- Sonavi Labs
- TrAMPoline Pharma



MII PORTFOLIO HIGHLIGHTS



Airgility's drone, a TEDCO Maryland Innovation Initiative company, could potentially save your life in a mass casualty situation



Two Baltimore university-born startups move their tech closer to market with fed funds



FDA clears Sonavex's ultrasound blood flow monitor

Sonavex readies to launch sales of medical tech with new FDA clearance

MII portfolio company AsclepiX Therapeutics Raises \$5M in New Funding



Neuraly, a JHU startup, launched with \$36 million: Targets Neurodegenerative Diseases

Freestate Optics' first product, Plate Vision, won Collegiate Baseball's Best of Show



The Johns Hopkins University, emocha Mobile Health Inc. win CDC funding to study effect of financial incentives on addiction recovery



Initially when we first started discussing the idea of starting NextStep I was losing sleep over the idea of doing this. But after we got the TEDCO MII grant and were introduced to the ecosystem, then I was losing sleep over not doing it.



- Brad Hennesie
CEO
NextStep Robotics



Journey from Intern to CEO – inConversation with Brad Hennesie of NextStep Robotics



TEDCO Portfolio Company, NextStep Robotics, receives \$600,000 in Second Funding Round



Abhita Batra, Otomagnetics CEO, Aims to Change the Lives of Childhood Cancer Survivors with Magnetic Drug Delivery Technology

“In addition to the financial backing, TEDCO also provided an investment of their time and advisory support to the young company. Arti Santhanam, Director of MII, especially was someone who became a great source of advice and mentorship for me during these pivotal times of growth.”



- Abhita Bhatra
CEO
Otomagnetics

Congrats to the inaugural Bisciotti Foundation Translational Fund awardees, especially Dr. Tian-Li Wang and Dr. Edward James Wright III

A significant milestone for a great TEDCO MII portfolio company - CoapTech (gets FDA clearance for PUMA-G System)

Medical device startup CoapTech, LLC has gained clearance from the U.S. Food and Drug Administration for its first product



TEDCO's Maryland Innovation Initiative Funded the First Delivery of a Kidney for Transplant via Unmanned Aircraft

Johns Hopkins spinout and TEDCO portfolio company Vixiar gets \$1.5M for tablet-based cardiac measurement system



TEDCO portfolio companies, Galen Robotics and Sisu Global Health, to pitch at Beta City competition on Oct. 4th



Following \$100M sale of Harpoon Medical, veteran health tech exec fundraises for new venture

TEDCO's Maryland Innovation Initiative awardee, Natalia Trayanova, inducted into the WITI (Women in Technology International) Hall of Fame



COMPANY EXITS



UMB



UMB

NEURALY

JHU



UMB

JPLC Associates, LLC

JHU



JHU



UMCP



The MII Program catalyzes the commercial potential of University innovation by securing funding and advancing our potentially world changing technologies.



- MARY MORRIS
Director, Baltimore Fund
 University of Maryland,
 Baltimore
 MII Board Member



COMPANY SUPPORT

TEDCO and the MII Team provide portfolio companies with more than financial support. The companies are receiving support from many different functions of TEDCO, including the MII Roundtable, Network Advisors, MDPace, Marketing, SBIR/STTR and TEDCO's Entrepreneur Expo (www.expo.tedco.md).

EXECUTIVE ROUNDTABLES

TEDCO's professionally facilitated Executive Roundtables group portfolio entrepreneurs around a common theme – industry vertical, demographic, or stage of development. Participants benefit from peer-to-peer support and mutual problem-solving in a confidential environment. This year 18 MII companies participated in four roundtables.



MDPACE

This federally funded TEDCO program was created for the expertise of individuals who have successfully navigated the medical device commercialization process, to assist entrepreneurs generate FDA 510(k) clearance for their technologies in 12-18 months. This year two MII companies participated and successfully obtained FDA clearances to launch their products to the market.

NETWORK ADVISORS

Two MII companies took advantage of this program which includes TEDCO-paid consultants who dedicate up to 40 hours per company to provide hands-on intensive help towards a specific deliverable.

MARKETING SUPPORT

TEDCO's Marketing Department provides support to the companies through media support, sharing social media posts, posting job listings, designing flyers and editing content.



COMMUNITY ENGAGEMENT



“

TEDCO's MII program has been instrumental in supporting Morgan's technology transfer efforts to move our innovations along the commercialization pathway, and into new start-up companies.

”



- WILLIE MAY
VP of Research & Economic Development
Morgan State University
MII Board Member

THANK YOU ADDITIONAL MII PARTNERS





“ MII sets the national standard for programs that support University technology commercialization. The opportunity for Hopkins to partner with other Maryland research universities to support tech startup creation is central to our mission. MII is a critical catalyst for the Maryland entrepreneurial ecosystem. ”



- NINA URBAN
Associate Director, FastForward
Johns Hopkins University
MII Board Member

MII ECONOMIC IMPACT

90

START-UP COMPANIES



CREATED AND SUPPORTED

REVENUE
GENERATED



\$7.3M

AVERAGE FTE
SALARY

\$97,000



JOBS CREATED

152





TEDCO is committed to supporting start-ups through each step of their early-stage process, and MII is an ideal representation of the kind of support and guidance these companies can leverage to jumpstart their innovative products.



- DR. ARTI SANTHANAM
Executive Director, MII

WHO WE ARE

MII BOARD

Robert Hallenbeck
BD Biosciences (Retired)

Mary Beth Tung
Maryland Energy Administration

Julie Lenzer
University of Maryland, College Park

Mary Morris
University of Maryland, Baltimore

Renee Winsky
Leadership Maryland

Wendy Martin
University of Maryland, Baltimore County

Willie May
Morgan State University

Nina Urban
Johns Hopkins University

MII SUPPORT STAFF

Arti Santhanam
MII Executive Director

John Gustin
MII Assistant Director

Silvia Goncalves
MII Program Coordinator

Stephen Auvil
Executive Vice President,
Operations and Programs

Ira Schwartz
Counsel TEDCO

Tammi Thomas
Vice President of Marketing

Neil Davis
Director, Entrepreneurial Services

Ann Pulley
Director of Finance



MII SITE MINERS

Bob Storey
Graham Allaway
Albine Martin
John Kessler

Richard Huguen
Elizabeth Good Mazhari
Alastair Mackay
David Fink

Robert Balcerzak
John Schveibinz
Daniel Nadash
Mark Komisky

MII REVIEWERS

Irfan Ali
Greg Cooper
Glenn Falcao
Linda Folsom-Jackson
Vivek (Vick) Khera
Paul LaPorte
Gus Simiao
Brian Skutt

Arti Varanasi
Guy Wassertzug
Katya Vert-Wong
Kevin Chang
Steve Ferguson
Caroline Hoedemaker
Shree Koushik
Matthew Miessau

Jen Murray
Helen Pentikis
Wendy Perrow
Nilay Shah
Jeff Strovel
Niall Sweeney
Ken Walz

The Maryland Energy Administration (MEA) has been a dedicated supporter of the Maryland Innovation Initiative. MEA supports energy innovation projects throughout the state via grants, tax incentives and partnerships with local businesses and nonprofit organizations. To learn more about how your organization can partner with MEA, visit www.Energy.Maryland.gov.



MARY BETH TUNG
Director

Maryland Energy Administration
MII Board Member



MARYLAND INNOVATION INITIATIVE 2019 Annual Report

PRODUCED BY:

TEDCO'S MARKETING DEPARTMENT

Cassy Haber, Marketing Coordinator

Aixelle Heilman, Digital Marketing Coordinator

Tammi Thomas, Vice President of Marketing



TEDCO

7021 Columbia Gateway Drive, #200

Columbia, MD 21046

410.740.9442

www.TEDCOMD.com