



TESTIMONY OF GEORGE M. DAVIS

Chief Executive Officer & Executive Director, Maryland Technology Development Corporation

Senate Budget & Taxation Subcommittee
Education, Business & Administration
Thursday, February 22, 2018

House Appropriations Subcommittee
Education & Economic Development
Wednesday, February 21, 2018

Introductions

Mr. Chairman, members of the Committee, thank you for the opportunity to appear before you to discuss TEDCO's FY2019 budget request. I am joined by:

- John Wasilisin, President & COO
- Andy Jones, Chief Investment Officer
- Dr. Dan Gincel, Executive Director of the Maryland Stem Cell Research Fund
- Bill Niland, CEO, Harpoon Medical (2/21)
- Margot Connor, CEO, RoosterBio, Inc. (2/22)

I would like to thank Jason Kramer for his cooperation in working together over the last few months.

While many of you are very familiar with TEDCO, for the benefit of others not so familiar, TEDCO was created by the legislature in 1998 to assist in the transfer of research and technology from Maryland universities and federal laboratories into the commercial marketplace, assist in commercializing private sector research and generally assist early stage and startup business in the State. With that backdrop, I'd like to offer the following highlights of the many accomplishments that TEDCO has accomplished over the past year. Data is of June 30, 2017.

Technology Commercialization Fund (TCF)

The TCF provides up to \$200,000 to entrepreneurs that are developing technology-related start-up companies. Sources of the technology may come from collaborations with a university in Maryland or any federal laboratory, participation in our Rural Business Innovation Initiative or as a tenant company in Maryland's technology incubators. Funds are used to defray direct costs of developing early-stage technology.

- 314 companies in portfolio
- TEDCO funding since inception = \$24.1M
- Follow-on funding received by companies = \$1.006B
- **Leverage of TEDCO funding = \$41.7 : \$1**

Cybersecurity Investment Fund (CIF)

The CIF program was passed during the 2014 General Assembly session. The bill designated TEDCO to be the administrator of the CIF.

The CIF program provides up to \$100,000 to support projects that advance a cybersecurity technology toward commercialization. CIF helps companies to reach a critical milestone in their product development that will move their technology further along the commercialization pathway, increase the company's valuation, and lead to follow-on investment for further growth and sustainability.

- 29 cybersecurity-based start-up companies funded

Maryland Innovation Initiative (MII)

The MII program was passed during the 2012 General Assembly session. The bill designated TEDCO to be the administrator of the MII.

The purpose of the MII is to promote and accelerate the rate of commercializing research conducted in the five Maryland research universities (Johns Hopkins, Morgan State, University of Maryland-College Park, University of Maryland-Baltimore and University of Maryland-Baltimore County). This includes encouraging qualifying universities to partner on commercialization proposals, strategies, and funding sources, including with federal laboratories located in Maryland, and facilitate technology transfer from university labs to start-up companies. The goal is to create start-up companies that are based upon technologies developed in these universities.

- Applications received since inception-509
- Awards made since inception-227
- Total award distribution by school-JHU (109), UMCP (40), Morgan (6), UMB (46), UMBC (26)
- New companies created since inception-56 (27 from JHU technologies, 12 from UMCP technologies, 12 from UMB technologies, 5 from UMBC)

Relationships with Federal Labs and Institutions

- Aberdeen Proving Ground, Science & Technology Board
(Covers approximately 12 R&D tenant organizations, including the Army Research Lab)
- Johns Hopkins University Applied Physics Lab
- NASA Goddard Space Flight Center; provides access to *all* NASA labs
- National Institute of Standards and Technology
- National Institutes of Health
(Specific Partnership Intermediary Agreement with National Cancer Institute)
- National Security Agency
- Naval Air Warfare Center Patuxent River
- Naval Medical Research Center
- National Cancer Institute
- Naval Surface Warfare Center Carderock Division
- Naval Surface Warfare Center Indian Head Division

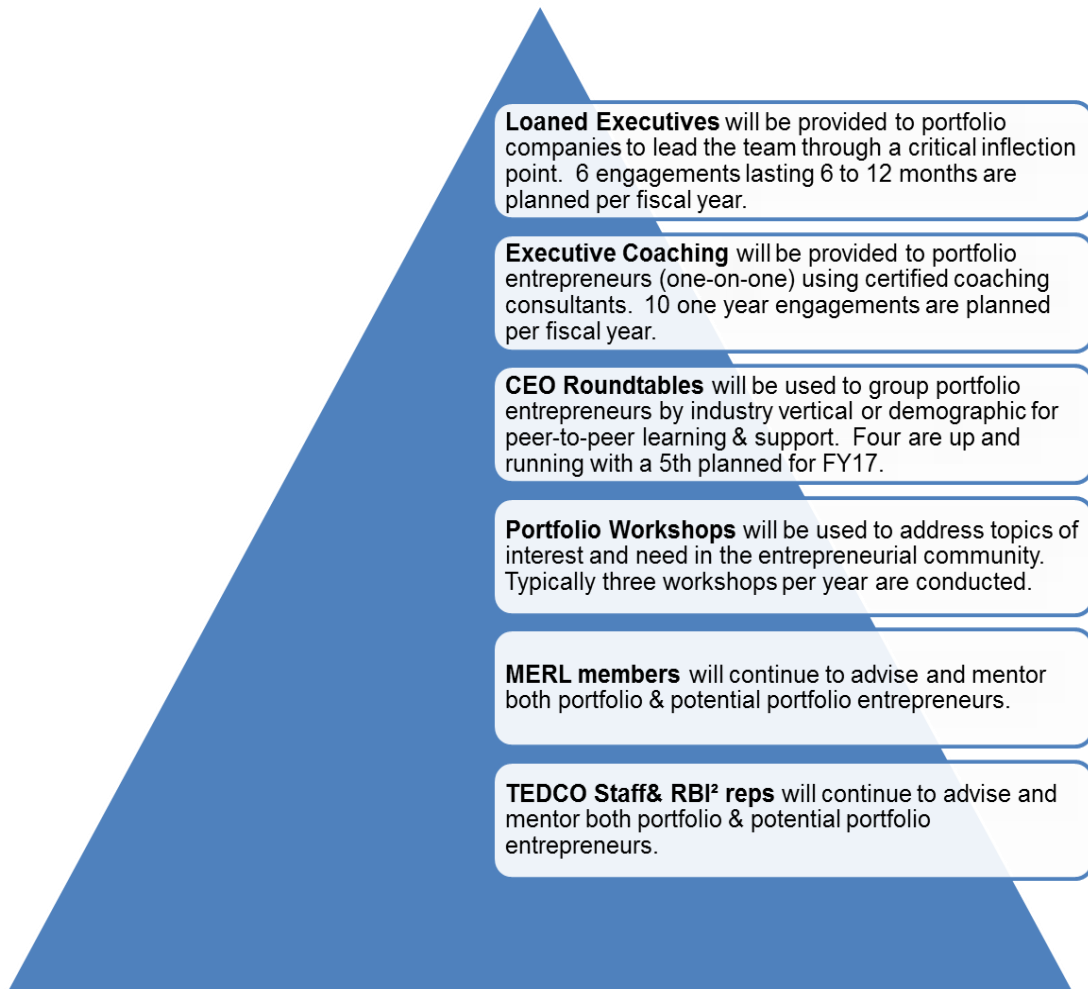
- Naval Surface Warfare Center Crane Division
- United States Army Medical Research and Materiel Command
(Includes six medical research labs and institutes)
 - 1) U.S. Army Aeromedical Research Laboratory (USAARL)
 - 2) U.S. Army Institute of Surgical Research (USAISR)
 - 3) U.S. Army Medical Research Institute of Chemical Defense (USAMRICD)
 - 4) U.S. Army Medical Research Institute of Infectious Diseases (USAMRIID)
 - 5) U.S. Army Research Institute of Environmental Medicine (USARIEM)
 - 6) Walter Reed Army Institute of Research (WRAIR))
- United States Department of Agriculture, Agricultural Research Service
(Includes over 100 national research locations and the Forestry Service)
- TechLink
(Department of Defense and NASA technology transfer partner)

Technology Business Incubators

Since introducing the “Maryland Technology Incubator Program” in 2001 as part of TEDCO’s statutory requirements, successful programs have been created and investments have been made in the State’s technology business incubators. Programs have included the Incubator Development Fund (capital incubator projects requiring a minimum 1:1 match), Feasibility Study Grants (to study potential new or expanded facilities; grants require a minimum 1:1 match), Business Assistance Grants (to provide incubator managers with discretionary funding to provide needed and direct assistance to tenant companies), and other grants and programs supporting the annual Incubator Company of the Year Awards and activities of the Maryland Business Incubation Association. The annual Incubator Company of the Year Awards has honored and recognized the superb efforts of the incubator managers and their staff, as well as the finalists and winners of these coveted awards. For twelve years running, hundreds of incubator companies have been deemed, by a committee of distinguished economic development and venture capital professionals, as the best in their respective categories.

Entrepreneurial Development

Entrepreneurs are always looking for new capital, and TEDCO has a number of financial assistance and investment programs that can assist start-up companies. But often what an entrepreneur needs most at any given time is not more money, but mentoring and counsel on how to use that investment. To that end, TEDCO developed in 2015 a variety of assistance programs for various stages of entrepreneurial development. This suite of programs, called **Executive Exchange**, has six components that provide mentoring and educational support for entrepreneurs as they develop their start-up companies (see graphic below).



To date, Executive Exchange engagements:

- Loaned Executives – 19
- Executive Coaches – 3
- CEO Roundtables - 4 (63 participants)

Maryland Stem Cell Research Fund

The Maryland Stem Cell Research Fund (MSCRF) was established by the Governor and the Maryland General Assembly during the 2006 legislative session. The purpose of the Fund is to promote State-funded stem cell research and cures through grants and loans to public and private entities in the State.

All MSCRF applications are evaluated by a scientific peer review committee. The Stem Cell Research Commission reviews the peer review rankings and then makes funding recommendations to the TEDCO Board for final approval. The annual grant review provides feedback to applicants so they can improve and resubmit previously unfunded proposals.

The MSCRF serves as a catalyst for new collaborations, building the scientific knowledge base and spurring the discovery of improved diagnostics, effective preventions, and long-awaited cures.

In FY2017 the Commission, together with TEDCO staff, developed a new program model to accelerate the treatments and commercialization of stem cell technologies and continue to increase industry collaboration.

Maryland Venture Fund

The Maryland Venture Fund (MVF) was transferred from the Department of Business and Economic Development to TEDCO on October 1, 2015. This transfer was the result of legislation passed during the 2015 General Assembly session upon the recommendation of the Augustine Commission, which was created to make recommendations for improving the business climate in Maryland. MVF consists of three assets:

- **The Legacy Maryland Venture Fund**-comprising investments in companies from the Enterprise Fund, the InvestMD fund and the federal State Small Business Credit Initiative (SSBCI). Fair market value of the assets in this fund as of 12/31/2017 is \$28,282,624.
- **The Venture Capital Fund-of-Funds**-comprising investments in 9 professionally-managed venture capital partnerships funded through InvestMD. Fair market value of the assets in this fund as of 12/31/2017 is \$34,353,149. Distributions-to-date from this fund are \$1,655,015. Total funded capital as of 12/31/17 is \$35,343,666. Total committed capital is \$54,304,807.
- **Maryland Innovation Opportunity Fund I (MIOF I)**. In November of 2017, TEDCO closed on a \$25M fund from the Maryland State Pension and Retirement System. This fund has closed on 5 investments as of 12/31/2017, with a cost basis of \$4,964,264 and a fair market value of \$5,112,664.

With the transfer of MVF, TEDCO is now able to offer a one-stop opportunity for entrepreneurs (our customers) seeking capital for their technology start-up companies.

Rural Business Innovation (RBI) Program

An important mission for TEDCO is to assist in the development of entrepreneurs throughout the State of Maryland. The RBI program is designed to enhance technology commercialization activities and provide technical and business assistance to small and early-stage technology companies in rural Maryland. Assistance to companies is provided by local business mentors contracted by TEDCO. Each region has a local mentor, whose responsibility is to evaluate potential clients, provide resources, consulting services and technical management assistance. Providing technical and general business assistance is a cornerstone of this program that helps small businesses gain access to investment capital, general business resources, federal laboratory and university research opportunities.

Entrepreneur Expo

In an attempt to promote and celebrate entrepreneurship in Maryland, TEDCO held its 7th Annual Maryland Entrepreneur Expo on October 25, 2017 (in conjunction with the Stem Cell Research Symposium) to bring together the various entities that have a vested interest in the development of entrepreneurs. **This event attracted over 850 people** comprised of new and seasoned entrepreneurs, investors, students, legislators, service providers, inventors, tech transfer

officers and economic development professionals. Due to its success, TEDCO is planning to continue the Entrepreneur Expo in 2018.

mdPACE- TEDCO received a grant from the federal Department of Commerce to develop a program to increase the flow of the U.S. Food and Drug Administration (FDA)-cleared devices in Maryland. The program will provide experienced executives, who have successfully navigated the FDA medical device commercialization process, to assist entrepreneurs to generate 510(k) cleared technology in 12-18 months instead of the typical 36-42 months needed by an inexperienced, unguided team. Program experts will focus the team on an early design freeze and on the specific, proven, design control-oriented requirements of the 510(k) submittal process. The nuances of these requirements are often apparent only after taking several medical devices through the process; they are certainly not readily apparent to an inexperienced team.

N-STEP-The National Institute of Standards and Technology (NIST) asked TEDCO to develop an entrepreneurial development program to train graduating post docs to become entrepreneurs and start new companies utilizing the technologies they were working on while at NIST. This program will combine entrepreneurial development activities with seed investments in start-up companies.

Life Science Investment Fund- The Life Science Investment Fund was developed to meet the needs of Maryland companies developing products addressing human health that require approval from the FDA for commercialization. The program helps to move products along this pathway by making investments that will enable companies to reach critical milestones early in their product development efforts, to increase the company's valuation, and to better position the company for follow-on investment, product commercialization, and job creation.

Market Search-A service that was part of the former BioMaryland Center was the availability of life science databases that entrepreneurs could use to do research on their markets. When this program was transferred to TEDCO, it was completely redesigned to 1) expand the variety of research by offering databases in non-life science industries as well as life sciences, and 2) establish more convenient locations for entrepreneurs to access these important services. There are now three (3) locations instead of two for these databases and they are located in tech incubators in Baltimore and Montgomery County, as well as TEDCO's office in Columbia.

Management and Administration

As you are aware, TEDCO is required by statute to seek an independent audit of its annual financial statements. **For the eighteenth (18th) consecutive year, TEDCO received an unqualified (clean) audited financial statement.**

Also, TEDCO completed its Department of Legislative Services Audit in 2016. **There were no findings in this report.**

I would like to thank members of this Subcommittee for their courtesy toward me and TEDCO, and for your steadfast support of our programs.

Responses to DLS Analysis of Issues

Comment-TEDCO should comment on what impact the declining Reserve Fund balance could have on its programmatic decisions.

Response-TEDCO has historically reinvested any earnings/income/revenue from its programs (Reserve Fund) back into new/expanded initiatives. Often these new programs have not received State funding but have been deemed important services by our customers to foster economic development growth. In an effort to bring new, cutting-edge programs to entrepreneurs, TEDCO has used its Reserve Funding to augment appropriations received by the State to offer a full suite of technology-driven initiatives to keep Maryland at the forefront of the constantly-evolving innovation economy. Recently, the rate of deploying these reserve funds has outpaced new earnings/income/revenues as TEDCO continues to broaden its program offerings in an attempt to foster the most supportive environment for tech start-ups to grow and thrive.

The impact of this declining Reserve Fund balance scenario will result in a scaling back of new initiatives until new resources can be attained.

Comment-The Department of Legislative Services recommends committee narrative clarifying that the annual report for the MVF include investment information for all of its investments that clearly show the fund source for each investment and when the investments were made.

Response-TEDCO concurs with the recommendation and will include the additional investment information in subsequent annual reports.

Comment-Brief the Committee on the revised Stem Cell Research Program.

Response-Staff will brief the Committee during our hearing.

TEDCO 2.0



20 Years of TEDCO

TEDCO's Core Purpose
and Mission are Relevant
& Critical

New Business Creation is
the foundation of economic
growth and vitality.

2.0 Needed to Ensure
Sustainability





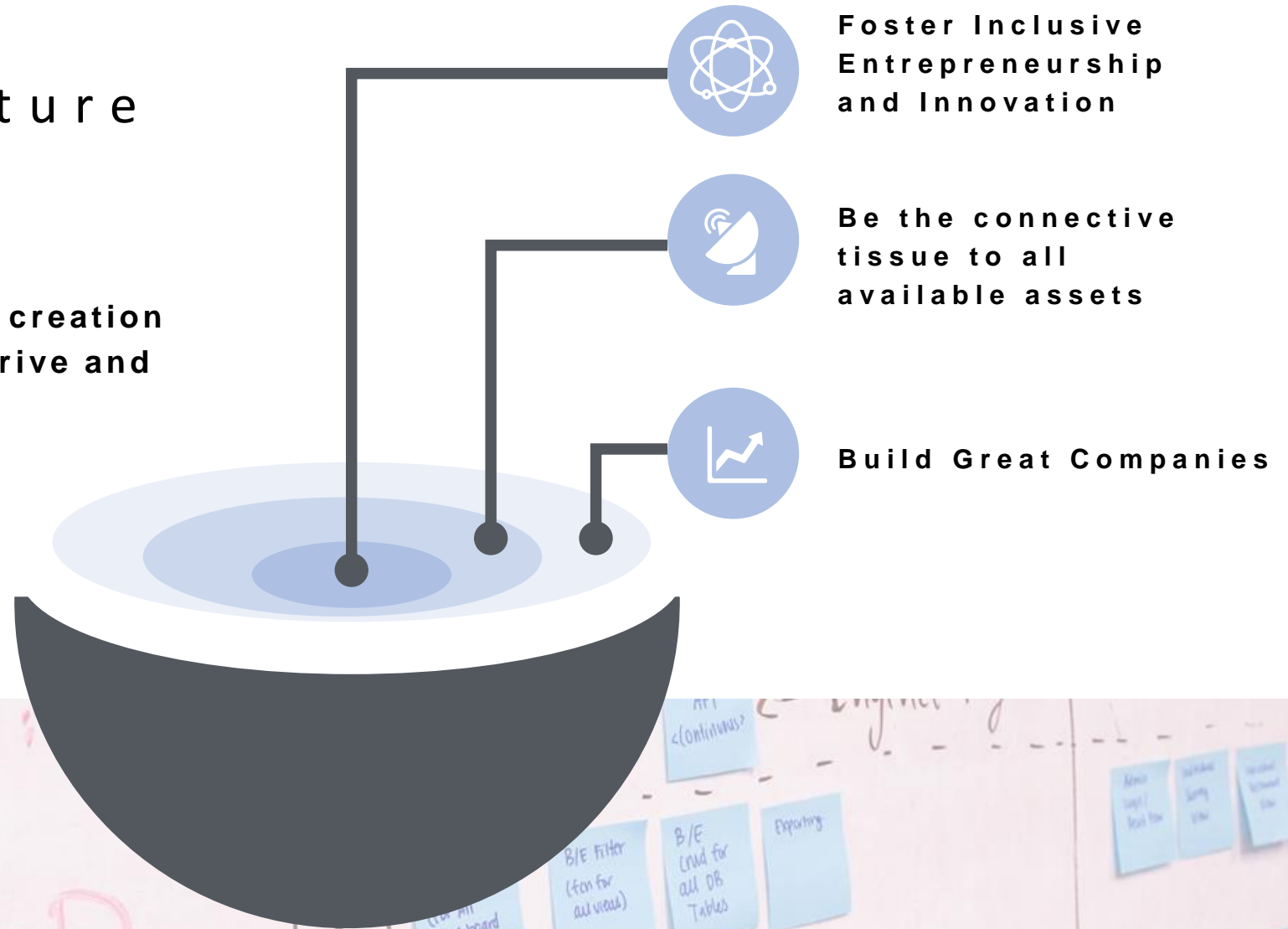
Leading Innovation to Market

Enhance economic development growth through the fostering of an entrepreneurial and innovation ecosystem. Discover, invest in, and help build great Maryland based technology companies.



Champion a Regional Culture

Where innovation, entrepreneurship and the creation of new businesses will thrive and grow.



TECH TRANSFER

Moving innovations from the research lab to the commercial sector to create new ventures and to make new products and cures available to the public



NAVAIR



N-STEP

BUS DEV SERVICES

Supporting entrepreneurs with the the creation and growth of their ventures through the availability of valuable information and resources



Gateway Concierge



MENTORING

Providing human expertise to support entrepreneurs at all stages of their venture development and throughout all regions of the State.

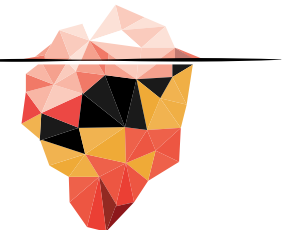


CONNECTIONS

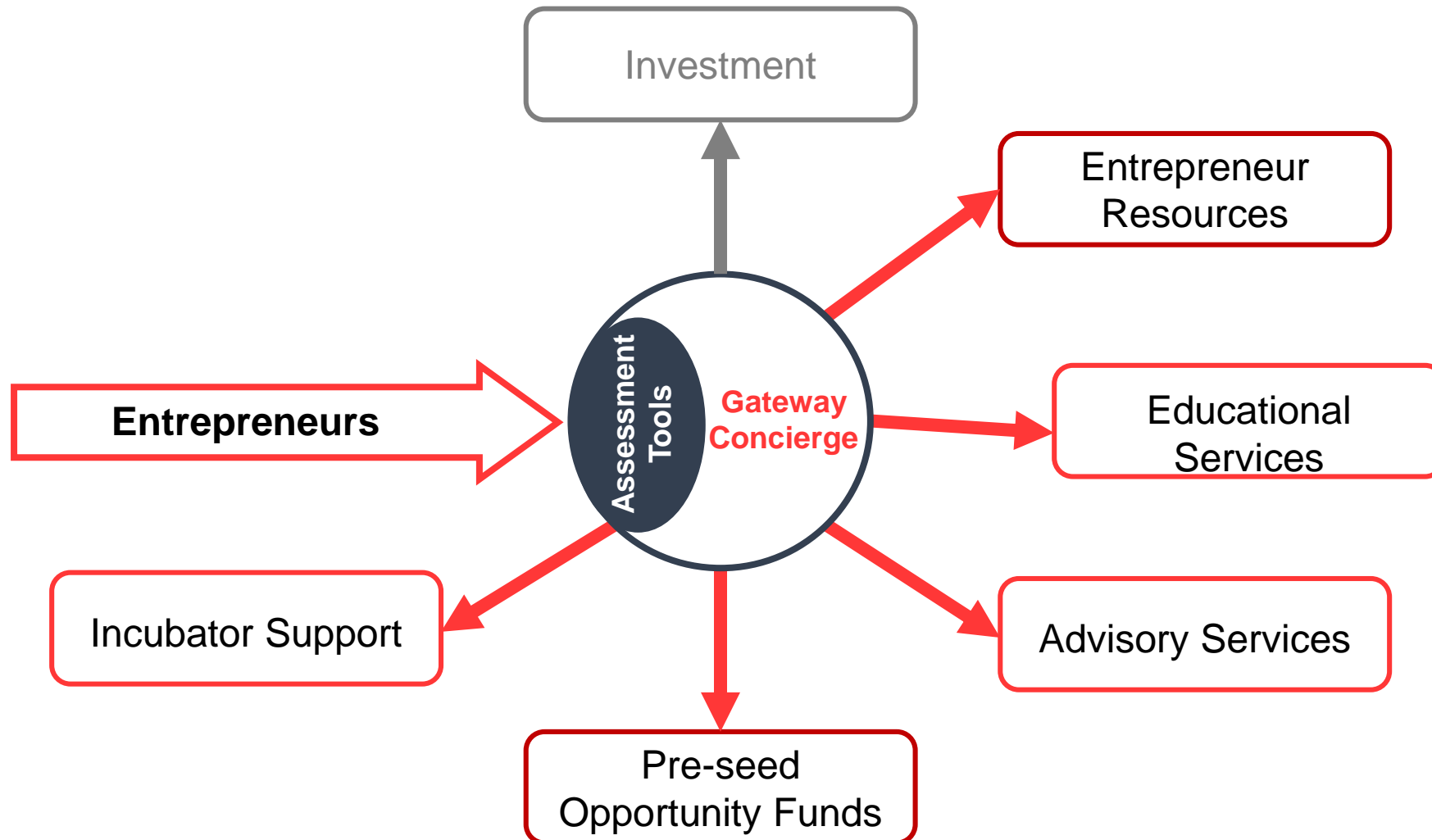
Fostering an interconnected business community in Maryland by bringing together entrepreneurs, start-ups, and the greater corporate community.



ICE AWARDS



Gateway Concierge



Federal Funding Programs



National Institute of Standards and Technology — \$2.8M
Entrepreneurial development program for graduating post docs

U.S. Navy @ PAX River — \$2.7M
Spin-in/spin-out tech scouting and tech incubator



U.S. Department of Commerce — \$500K
Assist entrepreneurs to navigate the FDA medical device commercialization process, resulting in 510(k) cleared technology

Multiple Pools of Capital

LEGACY MVF

\$110M evergreen fund
\$36M cash on balance sheet
\$500K - \$1.5M initial investment
2-3x for follow-on

Select investments:



OPPORTUNITIES FUND I (VINTAGE 2017)

\$25M traditional 10-year fund
\$21.3M cash available for investment
\$500K - \$1.5M initial investment
2-3x for follow-on

Select investments:



TEDCO SEED FUND

\$6M annual fund
\$100K - \$500K initial investments

Select investments:



MSCRF/MII

\$8.2M annual fund
\$5M annual fund

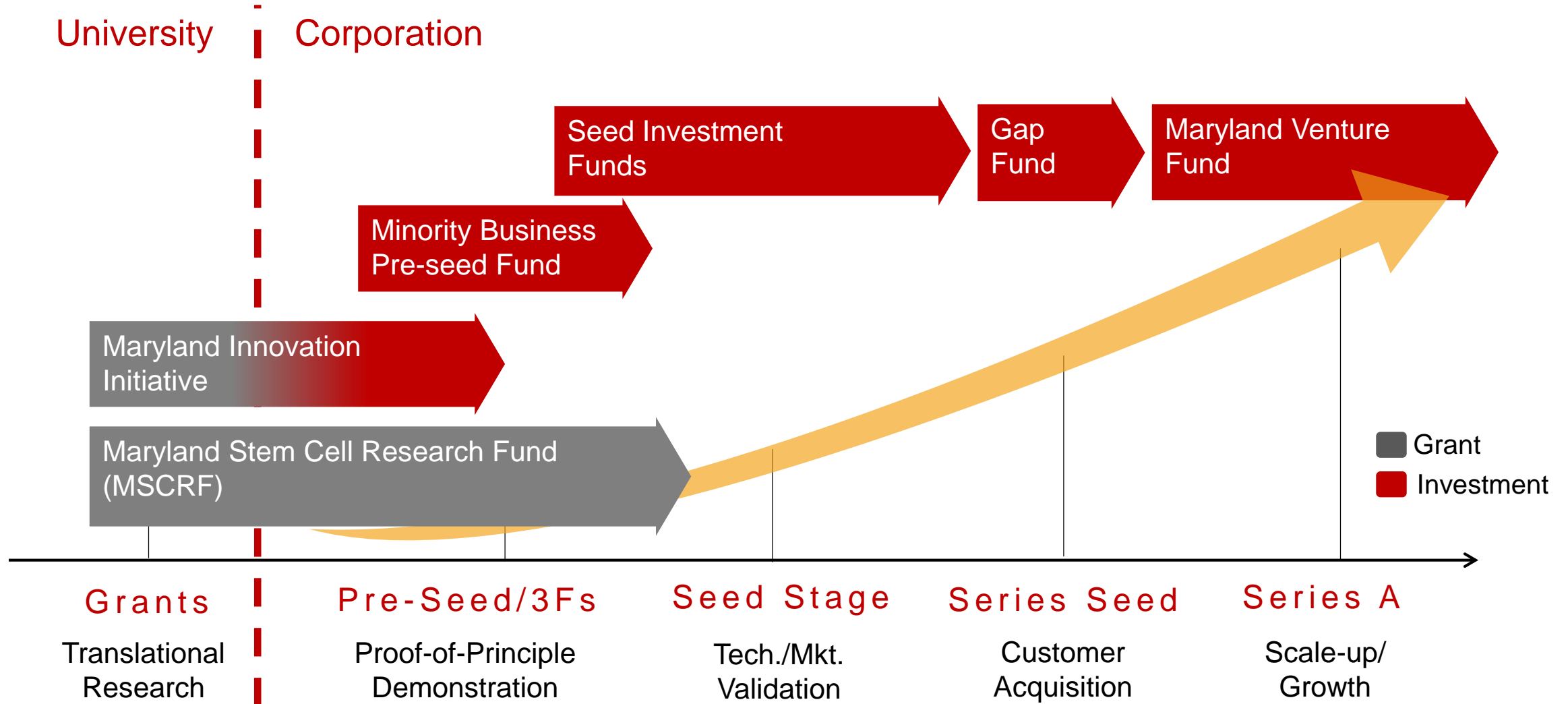
Select investments:



Representative partners:



Funding Programs





& ENTREPRENEUR EXPO STEM CELL SYMPOSIUM

PITCH. NETWORK. LEARN. BE INSPIRED.

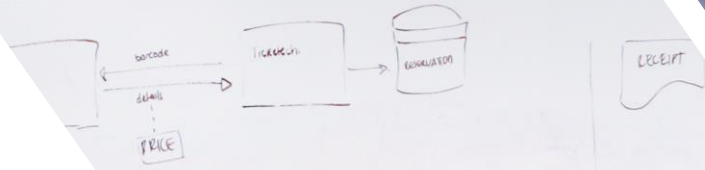
OCTOBER 30, 2018
THE HOTEL AT UNIVERSITY OF MARYLAND





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Enhance economic development growth through the fostering of an entrepreneurial and innovation ecosystem. Discover, invest in, and help build great Maryland based technology companies.



TEDCO 2.0

