



TESTIMONY OF LINDA L. SINGH
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Education, Business & Administration
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Education & Economic Development
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Introduction

Mr. Chairman, members of the Committee, thank you for the opportunity to appear before you to discuss TEDCO's fiscal 2021 budget allowance. I am joined by:

- Stephen Auvil, Executive Vice President, Operations & Programs
- Arti Santhanam, Executive Director, Maryland Innovation Initiative

And a second panel led by

- Dan Gincel, Executive Director, Maryland Stem Cell Research Fund.

I would like to thank the analyst, Emily Haskel, for her 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.

With the support of the TEDCO Board of Directors and its Chair Myra Norton, TEDCO has made several organizational and managerial changes over the last several months. The Maryland Venture Fund is operating under a new interim director, the new Venture Fund Authority members have been appointed, and the fund is again making investments in qualified Maryland businesses. The selection of an executive search firm, Korn Ferry was finalized in early January.

Efforts will soon be underway for a nationwide search for a permanent executive director. Additionally, TEDCO is contracting with a CFO to ensure proper management of our investment funds as well as assessing TEDCO's financial accounting system and processes.

Demand in TEDCO's services and investments remain very high. For example, just in the current fiscal year (FY20) we have already received 42 applications for the Builder Fund; in fiscal year 2019, over 200 companies attended Seed Open Forums; loaned executives contributed 156 hours to start-up companies; and 65 companies were mentored under our Rural Business Innovation Initiative. TEDCO has also made numerous changes to our policies and procedures to integrate the new regulations as follows:

- Developed regulations
- Redesigned our application and review process for all investments
- Established an Investment Committee
- Reinstated the Maryland Venture Fund Authority

Additionally, we continued to support the innovation economy in the rural parts of Maryland through our Rural Business Innovation Initiative (RBII) program. We continued to support technology transfer through our Maryland Innovation Initiative program and N-Step program. We supported the development and economic impact of new cures through our Maryland Stem Cell Research Fund grants. We have continued to serve Maryland's entrepreneurs through our various Gateway Services programs. We were able to bring together over 1,000 people at our Entrepreneur Expo to talk about the success of start-up companies and to highlight the many resources to support entrepreneurs in the State.

The remainder of this written testimony covers each of our programs and specific achievements made in the last fiscal year followed by our responses to the DLS analysis.

Technology Transfer and Commercialization

Maryland Innovation Initiative

Chapter 450 of 2012 created the Maryland Innovation Initiative (MII). This program is intended to increase the rate of commercializing technologies developed in Maryland's research universities (Johns Hopkins, Morgan State, University of Maryland-College Park Campus, University of Maryland-Baltimore Campus, and University of Maryland-Baltimore County). The program achieves this goal through de-risking technologies through grant awards, startup creation, and investments. The MII program is governed by its own statute and independent Board of Directors.

FY2019 MII Statistics

- # of proposals-64
- # of awards/investments-33
- # of start-up companies formed-14
- # of start-up companies funded – 7
- Total amount granted and invested - \$4,339,156

Cybersecurity Investment Fund

Chapter 535 of 2014 created the Cybersecurity Investment Fund (CIF). The CIF is targeted to cyber security technologies and builds on TEDCO's Technology Commercialization Fund.

FY2019 CIF Statistics

- # of investments-4
- # of jobs in funded companies-22
- Total \$ invested-\$764,999

Life Science Investment Fund

The Life Science Investment Fund provides funding to companies developing products for human health that require FDA approval. This fund was transferred to TEDCO from the Department of Commerce's BioMaryland program. This program previously provided awards under the names Biotechnology Development Awards and the Translational Research Awards. TEDCO modified the funding program to better meet the demand of those life science companies with the most challenging commercialization pathways.

FY2019 LSIF Statistics

- # of investments-6
- # of jobs in funded companies-11
- Total \$ invested-\$1,200,000

Maryland Technology Commercialization Fund

TEDCO's primary initiative in technology transfer and commercialization is the Maryland Technology Commercialization Fund (TCF). TCF supports technology and product development by start-up companies often deemed too early in their development to gain the interest of traditional venture capital investments. TCF's investments are intended to defray the cost of the additional research and development activities that would move a specific technology or technology package to the threshold of commercialization.

FY2019 TCF Statistics

- # of investments-2
- # of jobs in funded companies-7
- Total \$ invested-\$300,000

Gap Investment Fund

The Gap Investment Fund seeks to make disbursements to start-up technology-based companies

that are in need of capital to grow their businesses in Maryland. The disbursements are matched by investments the company has received from other sources. The purpose of this Fund is to help bridge the gap between seed funding and venture capital investments. Companies must use Gap Investment Funds to employ new staff to grow and become more firmly established in Maryland.

FY2019 Gap Investment Fund Statistics

- # of investments-3
- # of jobs in funded companies-8
- \$ awarded-\$1,050,000

Gateway Services

TEDCO Gateway Services, established in fiscal 2018, are intended to assist a promising start-up company to accelerate its path toward key milestones. Our Gateway Services take several different forms, depending on the stage of the company and an assessment of its likely path forward. The TEDCO Gateway Team collaborates with the start-up company and its other advisors to create an advisory solution that complements and augments the other assistance being received by the entrepreneur. The types of services provided are described below.

Rural Business Innovation Initiative

Studies conducted by the United States Small Business Administration (SBA) have shown that high-tech companies based in rural areas are often impeded by the absence of infrastructure necessary to support technical commercial enterprises, and the inability to recruit critical masses of people with the appropriate education and skill sets to fully staff such enterprises. However, the same studies show that when rural policy initiatives are enacted to provide small business assistance through non-profits and rural development centers, economic development in those areas is enhanced.

To this end, the Maryland Congressional delegation supported a federal SBA award to TEDCO to address the needs of small businesses in the rural areas of Maryland (Western MD, Southern MD, Northeastern MD, Upper Eastern Shore and Lower Eastern Shore) through the Rural Business Innovation Initiative (RBII). This funding was augmented by TEDCO funds to ensure a complete reach of the rural parts of the State. TEDCO brought on Business Mentors from the local areas to enhance technology commercialization activities by providing technical and business assistance to incubator-stage companies and incubators in the targeted counties.

The RBII program has been well-received by the rural businesses and elected officials and has been successful in providing technical assistance to the entrepreneurs in the rural areas. The hands-on involvement of the Business Mentors and the technical assistance of third-party consultants have been key factors in furthering the growth of these start-up companies. In fiscal 2019, Business Mentors actively supported, with on-going mentoring, 108 companies resulting in 1554 hours of mentoring, and 2 companies have received pre-seed investments.

Examples of business assistance included:

- Market studies
- Competitive analysis
- Funding source identification assistance
- Funding for infrastructure development
- Funding for technical assistance
- Funding for product development

In addition, the RBI program also organized Intellectual Property and Investor Readiness Workshops as well as sponsored and participated in a number of rural entrepreneurship-oriented events. RBI also partnered with a local university to build and sponsor an eight-week interactive rural iCorp course for rural companies.

mdPACE

mdPACE was a program jointly funded by TEDCO and a Federal Department of Commerce EDA i6 Grant. The program resulted in an increased flow of FDA cleared devices from the Central Maryland region. The Federal EDA i6 program that funded the mdPACE program expired in March 2019 and, as a result, this program was eliminated in the 4th quarter of fiscal 2019.

Advisory Services

Growing great companies takes more than money and Maryland’s entrepreneurs repeatedly express the need for assistance in certain very specific areas. To help meet that need TEDCO has partnered with a series of consultants that have current, relevant experience in one or more of these specific areas. This curated set of Network Advisors brings its broad and diversified depth of experience to bear on the unique needs of Maryland’s start-up companies – the entire effort is dedicated to helping the State’s technology-based entrepreneurs reach their full potential.

Prelude Pitch

Each month, TEDCO invites start-up companies to give their pitch in front of our team members and experienced mentors to receive valuable feedback and an introduction to TEDCO. In fiscal 2019, TEDCO held ten Prelude Pitch events which provided 49 companies (an average of five companies per event) an opportunity to pitch their ideas. A total of 27 Network Advisors volunteered their time for these events, which were held at TEDCO, a range of local incubators, as well as, a local university and business.

Roundtables

The CEO Roundtable groups 10 to 12 non-competitive portfolio entrepreneurs around a common theme – industry vertical, demographic, or stage of development. It is expected that each roundtable will continue to operate as long as it remains relevant. Participants are asked to make a soft commitment of one year to the roundtable, but turnover is anticipated and, once established, the facilitator and roundtable group will approve new members.

Builder Fund

The Pre-seed Builder Fund (or Builder Fund) was created to financially and operationally support the development of startup companies run by entrepreneurs who demonstrate a socially or economically disadvantaged background that hinders access to traditional forms of capital and executive networks at the pre-seed stage. Companies selected for Builder Fund support receive either executive management assistance, direct investment, or both, to accomplish specified milestones that better position the company for follow-on, professional investment. The Builder Fund differentiates itself by identifying exceptional investment opportunities statewide operated by anyone who can exert proof of their disadvantaged status (e.g., women, minorities, rural-based, disabled, veteran, etc.) by collaboratively advancing the development of those opportunities in ways that can lead to the next stage of investment. This program supports TEDCO's overall mission of discovering, investing in, and helping to build great, Maryland-based companies that grow and last.

To provide additional support, TEDCO advises companies of other State programs for minority and women-owned businesses. Specifically, all companies are informed of the services and investment programs under the Maryland Small Business Development Financing Authority (MSBDF). TEDCO will systematically make referrals to MSBDF for all companies that express an interest in other resources.

On-line Educational Resources

There are a lot of educational materials on entrepreneurship that can be found on-line. The current thinking around best practices in entrepreneurship revolves around the lean start-up approach. TEDCO believes strongly that entrepreneurs in most technology sectors should follow these practices when working to establish a company. Here you can find resources that may be helpful with accomplishing those goals. The TEDCO website links entrepreneurs to a variety of available and accessible on-line educational resources.

Market Search Databases

Many start-up companies fail due to a lack of understanding of their market. While there is no substitute for talking to potential customers, entrepreneurs first need to assess their potential market at a general level. An understanding of competitors, industry trends, and market segments through secondary research is an important part of developing a plan to launch a business. Moreover, entrepreneurs that do not have a solid understanding of their market will find it difficult to raise funding from TEDCO and other investors.

The Market Search Services provided by TEDCO are available at three locations. The services are a resource to help entrepreneurs address the challenges of conducting market assessments. The goal is to improve the market assessment and opportunity analysis associated with the development of business plans and applications for TEDCO's funding programs.

Federal Laboratory Technology Initiatives

NIST-Science and Technology Entrepreneurship Program

The overall objective of N-STEP (NIST – Science and Technology Entrepreneurship Program) is to provide opportunities for motivated researchers to build upon the experience gained while working at National Institute of Standards and Technology (NIST) as they explore entrepreneurial careers. The Program is focused on commercialization of research performed at NIST by employees nearing the end of their term of employment (including graduating post docs) that are interested in forming companies to independently pursue further translational research and development of technologies specifically related to NIST’s mission, so that the technologies can be commercialized as products or services to benefit the public. Ten awards have been made with funding available for ten more. Since this is supported with federal funds the program is national in scope. Of the ten awards, seven have been to Maryland startup companies.

FAST Grant – SBIR/STTR Proposal Lab

The Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Proposal Lab is a new series of workshops funded, in part, by the Small Business Administration in 2018 with a TEDCO match of cash and in-kind effort. TEDCO teamed with the GovCon Incubator and the Small Business Development Center (SBDC). The output of the program will be an increase in the win rate for first time SBIR/STTR proposals from Women Owned, Small Disadvantaged, and Rural Maryland businesses. The SBA’s goal is to double the national win rate for first time proposals from 16% to 32%. Not only does the SBIR/STTR Proposal Lab help with the SBIR/STTR win rate, it also provides business skills that improve the entrepreneur’s overall business acumen. The initial effort had a training cohort of 22 companies. The results are preliminary, but promising. To build on the program, TEDCO applied for and received a second FAST program award to repeat the SBIR/STTR Proposal Lab incorporating the lessons learned in the first effort. The results of these two efforts may be seen as a Federally subsidized pilot program for future TEDCO consideration.

Entrepreneur Expo

In an attempt to promote and celebrate entrepreneurship in Maryland, TEDCO held its 9th Annual Maryland Entrepreneur Expo in October 2019 to bring together the various entities that have a vested interest in the development of entrepreneurs. This event attracted over 1,000 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 already planning the next Entrepreneur Expo on October 21, 2020.

Management and Administration

As you are aware, TEDCO is required by statute to seek an independent audit of its annual financial statements. For the twentieth (20th) consecutive year, TEDCO received an unqualified (clean) audited financial statement.

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

Recommended Actions – DLS recommends concurring with the Governor’s allowance

Response – TEDCO concurs with the DLS analysis.

DLS Comment- TEDCO should comment on when it expects the level of proposals received (under MII) to return to earlier levels and what action it is taking to encourage proposals.

Response - Established in 2012, the MII program addresses a critical challenge in our start-up ecosystem, that of commercializing promising technologies from “Bench to Market” through start-up creation. The MII program does so through a structured innovative partnership with our participating universities – JHU, UMB, UMBC, UMCP & MSU. The program provides competitive grants to university entrepreneurs and to their spin-out start-up companies in an effort to de-risk technologies and to jump start their entrepreneurial journey. Since its inception, MII has grown by leaps and bounds to shape the entrepreneurial ecosystem in Maryland and has been recognized as best practice nationwide by think tanks such as the Milken’s institute and the Brookings Institute.

Over the past 7 years the program has been instrumental in helping with the creation of 95 companies which represents an impressive start-up creation rate of 30%. These companies have gone on to raise a cumulative follow-on funding of \$445 million, created 152 high tech jobs with an average salary of \$95,000 and generated revenue upwards of \$7.3 million, as well as 7 exits – a true validation for our program model.

Furthermore, the MII program has also spurred a variety of support efforts at our partner universities, such as the Catalyst fund at UMBC and the iGAP fund at Morgan State University that have helped us elevate the quality and positive outcome metrics for our program.

As part of our budget analysis TEDCO has been asked to comment on the apparent drop in applications and on when we expect the level of applications received to return to earlier levels and what actions we are taking to encourage applications.

As a starting point, it is possible that the program may not return to the initial level of applications. We believe the high number of applications in the initial years was due to the high pent up demand for such a program in the ecosystem. As the program matured the applications-received number is stabilizing around the FY19 number. This is due, in part, to a more effective triaging and evaluations of the commercialization potential of the projects by the university ‘Site Miners’ and is also reflected in the higher % of overall applications funded. For example, two-thirds into the current FY20 cycle, we have received 44 applications and funded 31 projects - a 70% funding rate, higher than 45-50% in the previous years.

While we believe there will be a natural ebb and flow to the application numbers as we move forward, we continue to work with our partner universities to better market the program through workshops at the various schools. We have also helped support activities at the universities through small sponsorships (eg. SBIR roadshow at UMCP), specific portfolio support & marketing efforts to increase visibility of both the program as well as the awardees and portfolio companies. We hope these efforts will help us access the best technologies at our partner universities and enhance our tech transfer-based economic development efforts.

DLS Issue #1: Changes In Response to 2019 Audit and Related Legislation

Response: Over the past several months, TEDCO carefully crafted regulations that address the auditors' findings as well as the provisions that were enacted under House Bill 543 and Senate Bill 340 of 2019 (Chapter 487 and 488). The new regulations went into effect on December 30, 2019 and govern the investment criteria for all of TEDCO's investment programs, not just the Maryland Venture Fund program, which was the focus of the audit. TEDCO incorporated the standard of Qualified Business, which was defined in the legislation, with our eligibility requirements to ensure that State funds are supporting Maryland companies. Further, the regulations require TEDCO to consider geographic and social diversity when considering companies for an investment; they require the inclusion of a claw back provision to ensure that companies are committed to staying in Maryland after they receive an investment; they include clear investment criteria and a standard scoring rubric to standardize how companies are evaluated; and they include diversity and inclusion benchmarks for each program. This will ensure that all stakeholders, including policy makers, companies, auditors, and the public in general have clear guideposts for each investment program, with clear expectations and clear standards for eligibility and success. The regulations will also ensure that TEDCO remains mindful of its dual mission of fostering statewide, inclusive, technology-based economic development and executing responsible stewardship of the State's funds entrusted to the organization.

Also, in adherence to the auditors' recommendations, TEDCO established a formal, more rigorous, and more transparent application process to ensure that TEDCO's investment programs are open, fair, and consistent with the economic development mission of the organization. TEDCO is now resuming investments with a comprehensive set of verifiable, documented, and clear standards for investments. TEDCO is also issuing quarterly reports to the General Assembly that document the economic impact of each investment.

TEDCO is also more closely monitoring third-party venture firms including hiring a contractual CFO to assist with this function. We have implemented a mechanism to enforce the quarterly report requirement and are now in receipt of comprehensive data from each firm related to the number of jobs created and the average employee compensation for each qualified business. Going forward, this data will be provided in each annual report that TEDCO submits to the Governor and the General Assembly. This data, as the auditors contend, will help TEDCO and the State monitor the investment activity of the venture funds, ensure that management fees are appropriate, and assess the impact of investments made on the Maryland economy. The CFO will be tasked with ensuring that all management fees charged by the third-party firms are complying with State law and with the contractual agreements. The CFO will have expertise on the

management of venture funds and will be well suited to identify areas that will require greater scrutiny and action by TEDCO.

TEDCO continually assesses whether there is a risk of potential shortfalls with each of the venture firms, and if any are identified, consults with the related venture firm and TEDCO's OAG legal counsel to determine if any necessary corrective action is merited. The audit, quite rightly, calls attention to a third-party venture firm, who was awarded funds, but has not made any investments in Maryland companies. As such, TEDCO has established a more robust review process, using the newly created Investment Committee of the Board, to remedy this particular situation.

DLS Issue #2 – Decline in Reserve Fund Expenditures

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 or the fund is otherwise replenished.

The Board is currently reviewing a new policy for the reserve fund to ensure future stability of TEDCO's finances and to enable more strategic investments in new initiatives.