

**T50T01**  
**Maryland Technology Development Corporation**

***Operating Budget Data***

(\$ in Thousands)

	<u>FY 16</u> <u>Actual</u>	<u>FY 17</u> <u>Working</u>	<u>FY 18</u> <u>Allowance</u>	<u>FY 17-18</u> <u>Change</u>	<u>% Change</u> <u>Prior Year</u>
General Fund	\$19,667	\$19,467	\$18,474	-\$993	-5.1%
<b>Adjusted General Fund</b>	<b>\$19,667</b>	<b>\$19,467</b>	<b>\$18,474</b>	<b>-\$993</b>	<b>-5.1%</b>
Special Fund	6,571	7,345	7,348	3	
<b>Adjusted Special Fund</b>	<b>\$6,571</b>	<b>\$7,345</b>	<b>\$7,348</b>	<b>\$3</b>	<b>0.0%</b>
<b>Adjusted Grand Total</b>	<b>\$26,238</b>	<b>\$26,812</b>	<b>\$25,822</b>	<b>-\$990</b>	<b>-3.7%</b>

Note: Includes targeted reversions, deficiencies, and contingent reductions.

- The fiscal 2018 allowance for the Maryland Technology Development Corporation (TEDCO) is \$25.8 million; a 3.7% decline from the fiscal 2017 working appropriation. The decline is almost exclusively related to a decline of about \$900,000 in general funds under the Maryland Stem Cell Research Program. Special funds remain fairly constant and reflect investment funds under the Maryland Venture Fund.
- The corporation does not report personnel data through the State budget system because its employees are not considered State employees. However, TEDCO reports that it has 22 full-time positions and 4 part-time positions. All positions are funded using State funds.

Note: Numbers may not sum to total due to rounding.

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## ***Analysis in Brief***

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### **Major Trends**

***Record High Amount of Follow-on Funding:*** A measure of success of the corporation's Technology Commercialization Fund is the extent to which recipients can ensure follow-on funding. In fiscal 2016, there was a significant increase in the amount of downstream funding secured by recipient companies.

***Program Encourages Start-ups:*** The Maryland Innovation Initiative (MII) is designed to combine the technology transfer expertise of TEDCO and the research expertise of the State's research universities to speed commercialization opportunities. The program is showing early signs of success in encouraging the creation of start-up companies that stem from university research.

### **Issues**

***Report on the Utilization of the Maryland Innovation Initiative:*** The 2016 *Joint Chairmen's Report* (JCR) included committee narrative that requested a report on the seemingly uneven distribution of awards under the MII. The report provided a contextual framework to explain the uneven award distribution and offered suggestions to improve the program's utilization by the State's research universities. **The Department of Legislative Services (DLS) recommends that TEDCO comment on its report on the performance of the MII program and specifically on how it will collaborate with the participating research universities to ensure their full participation and utilization of the MII program.**

***Investments of the Maryland Venture Fund:*** Chapter 141 of 2015 transferred the Maryland Venture Fund (MVF) from the Department of Commerce to TEDCO in recognition of the early stage investment expertise of the corporation. The fiscal 2016 MVF annual report details TEDCO's first full year of the administration of the program. **DLS recommends that TEDCO comment on the MVF and on any changes it has made in investment strategy and in the administration of the fund. Further, DLS recommends committee narrative that requests that the MVF annual report be expanded to include investment information on the Enterprise Fund legacy monies and on the federal funds from the State Small Business Credit Initiative program.**

***Reporting of TEDCO's Nonbudgeted Funds:*** TEDCO's status as a quasi-public agency affords it some flexibility as it fulfills its goals and responds to the needs of the quickly evolving technology sector. However, as it expands its responsibilities, it must also balance this flexibility with a responsiveness to budgetary concerns regarding transparency. **DLS recommends that the budget committees adopt committee narrative requesting a multi-agency effort to develop a plan that will provide consistent and transparent reporting of TEDCO nonbudgeted funds through the State budget process.**

## **Recommended Actions**

1. Adopt committee narrative establishing a multi-agency effort to develop more transparent budget reporting.
2. Adopt narrative that requests additional information be included in the Maryland Venture Fund annual report.

## **Updates**

***Maryland Stem Cell Research Program:*** In fiscal 2016, the Maryland Stem Cell Research Program supported 26 research grants that were approved from 166 applications. Funding for the program has consistently fallen over several rounds of cost containment actions. However, interest in the program remains high.

***Major Grants:*** Committee narrative, included in the 2008 JCR, requested a complete listing of award recipients for all deals or projects closed in fiscal 2008. The corporation is continuing to provide this information for subsequent years.

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**Maryland Technology Development Corporation**

***Operating Budget Analysis***

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**Program Description**

The Maryland Technology Development Corporation (TEDCO) was launched in 1998 to help commercialize the results of scientific research and development conducted by higher education institutions, federal laboratories, and private-sector organizations. TEDCO also aims to promote new research activity and investments that lead to business development in Maryland.

To achieve its goals, TEDCO provides nonequity investments to early stage technology businesses, and it funds development and patenting of new technologies at research universities. TEDCO also develops linkages with federal research facilities in the State and helps companies pursue research funds from federal and other sources. The corporation's role was expanded in fiscal 2016 with the enactment of Chapter 141 of 2015 to transfer the operation of the Maryland Venture Fund (MVF) and the biotechnology grant program from the Department of Commerce (Commerce).

TEDCO is also authorized to create, manage, and provide funds for the statewide Maryland Technology Incubator Program. Technology business incubators offer start-up companies physical office space, research space, and an array of business services in hopes of generating new research and jobs.

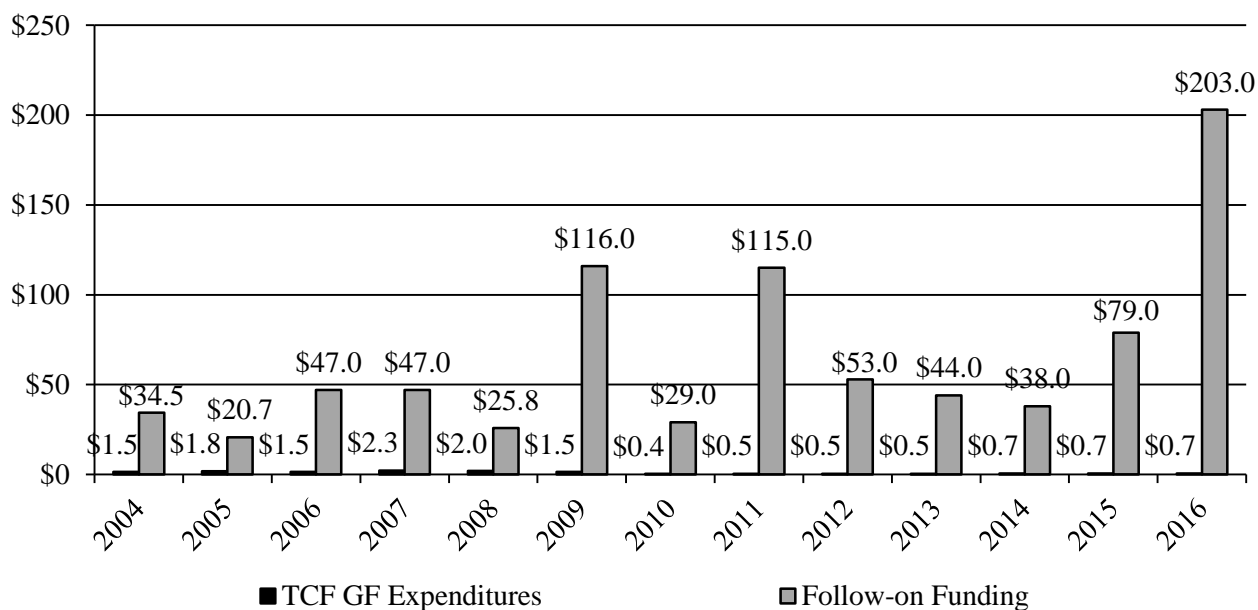
TEDCO supports stem cell research and development at Maryland's research universities and private-sector research corporations in accordance with the Maryland Stem Cell Research Act of 2006. The Maryland Stem Cell Commission established an independent scientific peer review committee to review, evaluate, rank, and rate research based on procedures and guidelines that give consideration to scientific, medical, and ethical implications.

**Performance Analysis: Managing for Results**

**1. Record High Amount of Follow-on Funding**

The Technology Commercialization Fund (TCF) provides seed investments to early stage technology companies that are economically viable but do not yet have the scale needed for a venture capital investment. A measure of success for the TCF is the ability of funded start-ups to obtain follow-on funding for commercialization. The primary sources of follow-on funds include federal grants, venture capital, and other equity investments. TEDCO tracks leveraged funds for at least five years for each TCF recipient. **Exhibit 1** shows follow-on funding for the TCF recipients relative to the amount of general fund investment in the program.

**Exhibit 1**  
**Follow-on Funding for Recipients of TEDCO Investments**  
**Fiscal 2004-2016**  
**(\$ in Millions)**



GF: General Fund  
 TCF: Technology Commercialization Fund

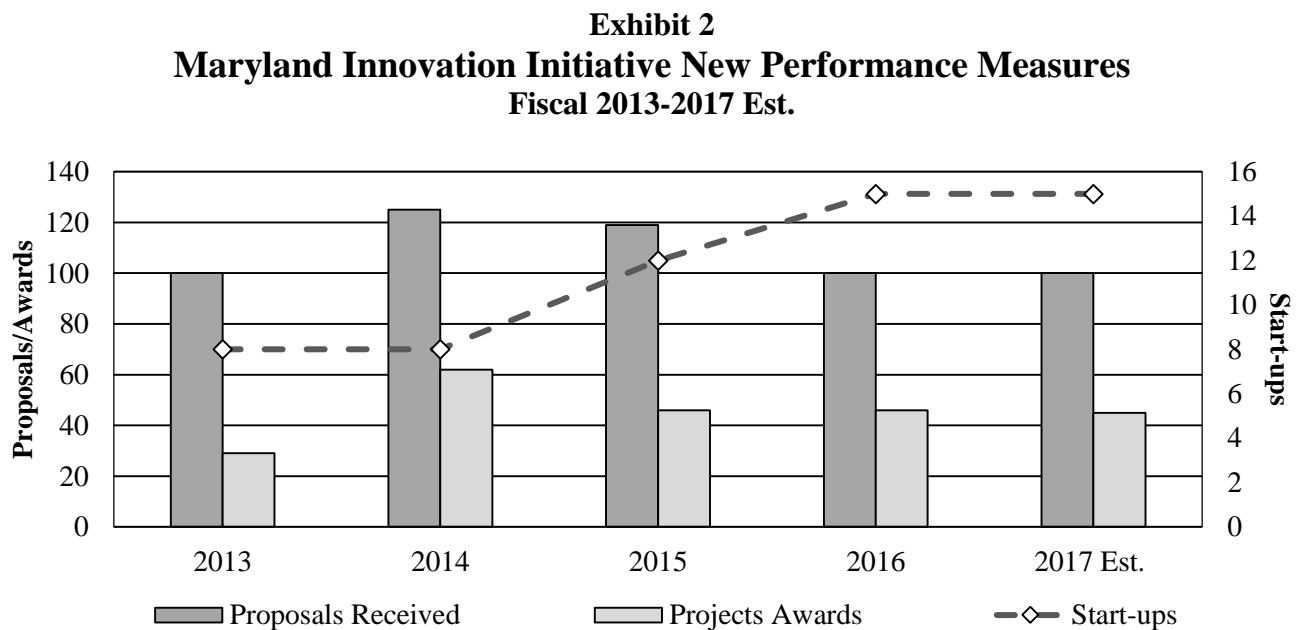
Note: Follow-on funding is measured for companies receiving Technology Commercialization Fund awards and is tracked over multiple years.

Source: Maryland Technology Development Corporation

This measure is of particular importance to the corporation because success in raising downstream funding is a key criterion in evaluating second award proposals. It should be noted that the TCF program is supplemented by nonbudgeted funds from the corporation's reserve funds, and that follow-on funding reflects the impact of the entire investment by the corporation. As shown in Exhibit 1, general funds have declined from a high mark of \$2.3 million in fiscal 2007 to \$663,000 in fiscal 2016. It does not appear that this decline has significantly dampened follow-on funding for the corporation's grantees. In fact, follow-on funding reached a record high of \$203.0 million in fiscal 2016. Several companies were able to attract a significant amount of funding in fiscal 2016. For example, one cybersecurity company was able to secure \$70.0 million in follow-on funding.

## 2. Program Encourages Start-ups

At the suggestion of the Department of Legislative Services (DLS), TEDCO has begun reporting measures that demonstrate the progress of the Maryland Innovation Initiative (MII). MII, created by Chapter 450 of 2012 is designed to combine the technology transfer expertise of TEDCO and the research expertise of the State's research universities to create opportunities for commercialization. It is meant to encourage a foundation from which start-up companies may be formed from university research. **Exhibit 2** shows the number of proposals received under the program, the number of proposals that were awarded funds, and the number of start-up companies formed as a result of the funded innovation.



Source: Maryland Technology Development Corporation; Governor's Budget Books, Fiscal 2016

As shown, in fiscal 2015 and 2016, the program was able to increase the number of start-ups formed. It is expected that as the program matures, more innovations will reach the stage of commercialization, thereby increasing the number of start-ups. The MII program will be discussed in further detail under the Issues section of this analysis.

## Proposed Budget

As a quasi-public agency, the majority of the fiscal 2018 allowance is budgeted as a general fund grant of \$18.5 million. As shown in **Exhibit 3**, programmatically, the general fund allowance includes funds for: salaries and operational costs; the TCF, the Maryland Industrial Partnership

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Program, the Rural Business Initiative, the Cyber Security Investment (CIF), the BioMaryland Grant program, the MII, and the Maryland Stem Cell Research Program. Special funds are included in the allowance and reflect the administration costs and expected investments of the MVF.

**Exhibit 3**  
**TEDCO Budget**  
**Fiscal 2016-2018**  
**(\$ in Thousands)**

	<u>2016</u>	<u>Working</u> <u>2017</u>	<u>Allowance</u> <u>2018</u>	<u>Change</u>
<b>General Funds</b>				
<b>Operations</b>				
Salaries and Wages	\$1,417	\$2,052	\$2,047	-\$5
Contractual Services	45	41	49	8
Equipment	12	17	15	-2
Other operational costs	637	63		-63
<b>Operations Subtotal</b>	<b>\$2,110</b>	<b>\$2,173</b>	<b>\$2,111</b>	<b>-\$62</b>
<b>Programs</b>				
Maryland Technology Commercialization Fund	\$663	\$600	\$662	\$62
Maryland Industrial Partnership Program	350	300	300	0
Rural Business	500	500	500	0
Cyber Security Investment Fund	900	900	900	0
Life Sciences Investment Fund	1,151	1,101	1,001	-\$100
Maryland Innovation Initiative	4,900	4,800	4,800	0
Stem Cell Research Fund	9,093	9,093	8,200	-893
<b>Programs Subtotal</b>	<b>\$17,557</b>	<b>\$17,294</b>	<b>\$16,363</b>	<b>-\$931</b>
<b>General Fund Total</b>	<b>\$19,668</b>	<b>\$19,467</b>	<b>\$18,474</b>	<b>-\$993</b>
<b>Special Funds</b>				
Enterprise Fund	\$5,238	\$6,000	\$6,000	
Enterprise Fund Administration	1,332	1,345	1,348	\$3
<b>Special Fund Total</b>	<b>\$6,571</b>	<b>\$7,345</b>	<b>\$7,348</b>	<b>\$3</b>
<b>Grand Total</b>	<b>\$26,238</b>	<b>\$26,812</b>	<b>\$25,822</b>	<b>-\$990</b>

TEDCO: Maryland Technology Development Corporation

Note: Numbers may not sum to total due to rounding.

Source: Maryland Technology Development Corporation



## **TEDCO Programs Funded by General Funds**

### **TCF**

This program awards seed funding to early stage companies developing technology. The \$100,000 awards are meant to develop and commercialize technology products of Maryland early stage companies. The fiscal 2018 allowance includes approximately \$662,000 in general funds to support the program. However, the corporation advises that it will supplement the State funds with over \$1 million of its own nonbudgeted funds. The corporation does not report on its nonbudgeted funds. Therefore, the extent to which it can subsidize its programs is unclear.

### **MII**

The fiscal 2018 allowance includes \$4.8 million in general funds for MII, matching the level of funds in fiscal 2017. MII, created by Chapter 450, is designed to combine the technology transfer expertise of TEDCO and the research expertise of the State's research universities to speed commercialization opportunities. To qualify for participation in the initiative, each university must provide funds annually. Funds may be used to (1) provide grant funding to a qualifying university-based entrepreneur, or other start-up entity to promote the commercialization of technology developed in whole or in part by a qualifying university; (2) pursue grant funding for the initiative or its qualifying universities; (3) develop and implement guidelines for technology transfer; and (4) identify projects at qualifying universities that may be viable for commercialization. The MII program is discussed in further detail in the Issues section of this analysis.

### **Maryland Stem Cell Research Program**

The Stem Cell Research Fund was established by Chapter 19 of 2006 to support stem cell research and development at Maryland research institutions or private companies. The Stem Cell Research Commission reviews the proposed research process for applicant projects and makes recommendations to the TEDCO board about research grant awards. The fiscal 2018 allowance includes \$8.2 million in general funds for the program. This is a decrease of \$893,000 from fiscal 2017. Depending on the types of applications received by the program, this decrease will likely result in fewer awards in fiscal 2018. More information on this issue is included under the Updates section of this analysis.

### **Maryland Industrial Partnership Program**

The fiscal 2018 allowance includes \$300,000 in general funds for the Maryland Industrial Partnership program. This level of funding is unchanged from the fiscal 2017 working appropriation. This program is designed to accelerate commercialization by matching funds for university-based research projects that help companies develop new products. Prior to 2010, these funds were budgeted in the Maryland Higher Education Commission and passed through to the University of Maryland, College Park (UMCP). Given TEDCO's expertise with technology commercialization, it was deemed a better fit to be overseen by the corporation. It should be noted that UMCP contributes about \$1 million to the program each year.

### **Cyber Security Investment Fund**

The fiscal 2018 allowance includes \$900,000 in general funds to be dedicated to the CIF; matching the appropriation from fiscal 2017. The CIF provides up to \$100,000 to support projects that advance cybersecurity technology toward commercialization. Specifically, the funds are meant to move their technology further along the commercialization pathway, increase the company's valuation, and lead to follow-on investment for further growth and sustainability.

### **Rural Business Initiative**

The fiscal 2018 allowance includes \$500,000 in general funds to be dedicated to the Rural Business Initiative (RBI), again matching the fiscal 2017 funding level. The RBI is designed to provide technical and business assistance to small and early stage technology-based companies that are located in rural Maryland. This assistance is provided by regional business mentors that are contractual staff under TEDCO.

### **Life Sciences Investment Fund**

The fiscal 2018 allowance includes \$1 million in general funds for the Life Sciences Investment Fund. This is a small decrease from fiscal 2017 (\$100,000). The fund was formerly the grant program housed under Commerce's BioMaryland Center. It was transferred to TEDCO through legislation in fiscal 2016. TEDCO tailored the program to meet the needs of Maryland companies developing products addressing human health that require approval from the U.S. Food and Drug Administration for commercialization. According to TEDCO, the program makes 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.

The same legislation included intent language that all functions of the BioMaryland Center be transferred to TEDCO from Commerce. Funds related to biotechnology market research databases were not transferred by the Administration despite the legislative intent. Budget language adopted in the fiscal 2017 budget bill restricted \$400,000 in the Commerce appropriation to be transferred to TEDCO for this purpose. Again, the Administration chose not to make this transfer and will allow the funds to revert to the General Fund. The databases are useful to biotechnology entrepreneurs by providing information on licensing opportunities, target markets, federal approval statutes, and clinical trials. As such, TEDCO is providing access to the databases by using its own nonbudgeted funds.

### **Special Funds: MVF**

Chapter 141 transferred the MVF from Commerce to TEDCO. As such, TEDCO's budget began to include special funds in fiscal 2016. The fiscal 2018 allowance includes \$1.3 million in special funds for the administration of the program and \$6.0 million in special funds for investments of the MVF. This is essentially unchanged from the fiscal 2017 working appropriation. The details on the investments and returns of the MVF are discussed under the Issues section of this analysis.

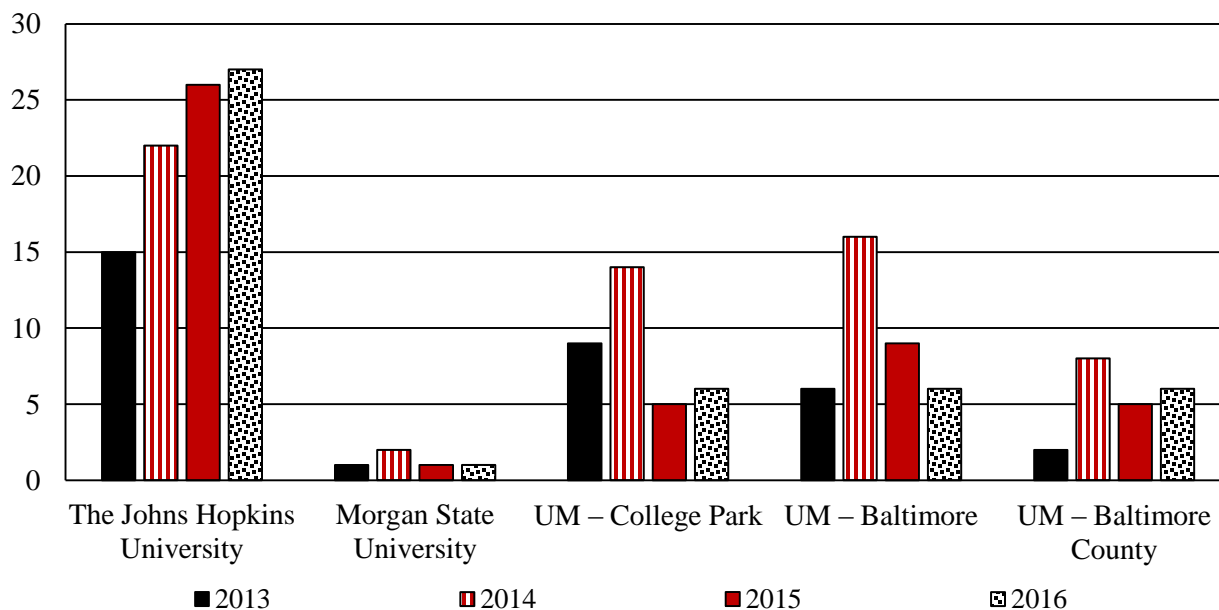
## Issues

### 1. Report on the Utilization of the Maryland Innovation Initiative

MII, created by Chapter 450, is designed to combine the technology transfer expertise of TEDCO and the research expertise of the State's research universities to speed commercialization opportunities. To qualify for participation in the initiative, each university must provide funds annually. These funds may be used to (1) provide grant funding to a qualifying university-based entrepreneur, or other start-up entity to promote the commercialization of a technology developed in whole or in part by a qualifying university; (2) pursue grant funding for the initiative or its qualifying universities; (3) develop and implement guidelines for technology transfer; and (4) identify projects at qualifying universities that may be viable for commercialization.

TEDCO began making MII awards in fiscal 2013. **Exhibit 4** shows the number of awards for each institution over the life of the program. Total awards over four years total 187, resulting in the creation of 45 start-up companies.

**Exhibit 4**  
**Maryland Innovation Initiative Awards**  
**Fiscal 2013-2016**



UM: University of Maryland

Source: Maryland Technology Development Corporation

The 2016 *Joint Chairmen's Report* (JCR) included committee narrative that requested a report on the causes and potential programmatic adjustments related to an uneven distribution of awards among the five participating universities. It was noted that, as of January 2016, The Johns Hopkins University (JHU) claimed almost 46.0% of the grants and over 47.0% of the funding. The top three institutions garnered 88.7% of total funding. TEDCO submitted its report in November 2016 and outlined the strengths of the program and some potential areas for improvement.

TEDCO's report highlights that JHU's success can be attributed to a substantial research budget and a strong entrepreneurial culture and technology transfer operational infrastructure. Exhibit 4 demonstrates that cultural, policy, and funding components are required for optimal commercialization opportunities. Over the short life of the program, JHU continues to increase its grants, while the other research universities post uneven success. According to TEDCO's report, based on the research expenditures reported to the National Science Foundation in 2014, JHU's research budget was 66 times greater than the university with the smallest research budget (Morgan State University (MSU)).

While the size of the research budget likely causes a significant portion of the disparity under the MII program, there are other potential causes. One of the contributing factors is a well-established and well-funded technology transfer office. The report notes that a well-funded office would include both operational and patent budgets. In order to bolster its technology transfer efforts, Chapter 713 of 2016 was enacted to ensure funding for MSU's technology transfer office. Specifically, the bill requires the budget bill to include \$1 million for MSU to (1) enhance its Office of Technology Transfer (OTT); and (2) increase the capacity of OTT to move technology into the marketplace. The bill also required that TEDCO provide technical assistance to MSU in this endeavor.

Another notable factor that contributes to the ability of universities to commercialize research is to have incubators attached to the university. JHU, UMCP, and the University of Maryland Baltimore County have well established business incubators, from which start-up companies are supported with technological and operational support.

TEDCO's report does not make any recommendations for legislative changes to its MII program. However it does plan to work collaboratively with the research universities to better the university experience with MII. One recommendation is for the universities to improve the site miner program. Site miners are trained to recognize the commercialization potential of academic discoveries and also have industry and product development experience. MII funds may be used to employ site miners. However, TEDCO notes that some universities have more effective use of site miners with outside expertise than others.

As mentioned above, TEDCO will also assist the universities, notably MSU, with strengthening technology transfer offices. Dedicated staff, support from university leadership, and dedicated funding, especially for patent support, is required for healthy offices.

**DLS recommends that TEDCO comment on its report on the performance of the MII program and specifically, on how it will collaborate with the participating research universities to ensure their full participation and utilization of the MII program.**

## **2. Investments of the Maryland Venture Fund**

In fiscal 2014, the President of the Senate and the Speaker of the House appointed a private-sector commission to examine the structure, funding, and efficacy of the State's current economic development activities. The Maryland Economic Development and Business Climate Commission (Augustine Commission) had a charge to make policy and funding recommendations to improve the State's business climate and competitiveness. The commission recommended that State programs to assist early stage companies be aligned within TEDCO. Chapter 141 effectuated that recommendation and transferred these programs to TEDCO's purview.

Specifically, by budget amendment in fiscal 2016, the MVF (also known as the Enterprise Fund) was transferred from Commerce to TEDCO. The MVF provides capital through equity purchases for start-up companies that are developing innovative technologies. Beginning in fiscal 2013, this program also became the means for the implementation of the InvestMaryland program. This is a State-supported venture capital program that was funded through an auction of a tax credit against the insurance premium tax for insurance companies. A portion of these funds are invested in-house and a portion are invested by private venture funds on behalf of the State.

In December 2016, TEDCO issued its first annual report to show its first full year of operating the program since the transfer. The report covers only the component of the MVF that represents the InvestMaryland program as this is the only reporting requirement in the statute. The InvestMaryland funding represents the largest component of the MVF. It is comprised of the proceeds of the sale of the insurance premium tax credit, which generated \$84 million for the MVF.

The report comprehensively details the investments made by private equity firms and by the State, including the amount of capital committed to each company, the fair market value of each investment, and any returns on investment. Although TEDCO advises that venture investments are meant to be viewed as long-term investments, it can be reported that since the inception of the program in 2013, the program's investments have returned \$1.2 million to the General Fund and \$1.3 million back to the MVF to be reinvested.

The MVF is capitalized with other funds besides the InvestMaryland proceeds. The fund is also comprised of the funds from the legacy investment program, the Enterprise Fund, and with funds from the federally funded State Small Business Credit Initiative (SSBCI). In 2011, the State was awarded a total of \$23 million from the U.S. Department of the Treasury in support of this initiative. This federal program was designed to utilize existing State economic development programs to increase the capital available to small businesses. The corporation provided information about these sources of funds upon request after the submission of the annual report. **Exhibit 5** summarizes the total investments from the fund (from each source of funding), the returns on investment (to the extent known), and the fair market value.

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**Exhibit 5**  
**Maryland Venture Fund Total Investments**  
**(\$ in Thousands)**

	<u><b>Total Investments</b></u>	<u><b>Returns</b></u>	<u><b>Fair Market Value – Fiscal 2016</b></u>
<b>InvestMaryland</b>			
Private Venture Firms	\$26,949	\$1,232	\$24,700
State Investment	16,217	1,312	14,013
Enterprise Fund	10,386	*	5,398
SSBCI (Federal Funds)	10,758	0	7,988
<b>Total</b>	<b>\$64,310</b>	<b>\$2,544</b>	<b>\$52,099</b>

SSBCI: State Small Business Credit Initiative

\*Currently unavailable

Source: Maryland Technology Development Corporation

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As shown, the current investments total \$64.3 million. The bulk of the investments are due to private equity firms that were awarded funds under InvestMaryland. TEDCO advises that minimal returns and lower fair market value are typical for the early stages of equity investments. It should be noted however, that the return on investment of the legacy Enterprise Funds is not reported at this time. There is no statutory requirement to report on these funds in the annual report. Further, these investments were made when the fund was housed within Commerce. It is likely that the corporation will need further time to parse the investments made before the fund was transferred. However, it remains imperative that the fund and its investments and returns be transparent to inform policy and budgetary decision making.

**DLS recommends that TEDCO comment on the MVF and on any changes it has made in investment strategy and in the administration of the fund. Further, DLS recommends committee narrative that requests that the InvestMaryland annual report be expanded to include investment information on the Enterprise Fund legacy monies and on the federal funds from the SSBCI program.**

### **3. Reporting of TEDCO's Nonbudgeted Funds**

The corporation was created in 1998 by statute as a public instrumentality of the State to (1) assist in transferring to the private sector and commercializing the results and products of scientific research and development conducted by colleges and universities in the State; (2) assist in the commercialization of technology developed in the private sector; and (3) foster the commercialization of research and development to create and sustain businesses throughout all regions of the State.

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The corporation's quasi-public status allows it the flexibility to respond to a quickly evolving technology sector. Specifically, TEDCO is exempt from (1) State and local taxes; (2) oversight by the Board of Public Works and the laws governing procurement under the General Procurement Law; (3) laws governing the State personnel management system; (4) laws regarding attendance at open sessions; and (5) laws related to Executive departments. However, the corporation, its board, and employees are subject to the public ethics law and the Public Information Act.

The structure of TEDCO's budget also reflects its quasi-public status. Prior to fiscal 2016, its budget was simply structured as a general fund grant to allow TEDCO the flexibility to fund its programs and personnel within that grant. TEDCO supplements the State funding with its own funds. It earns funds through its investments, sponsorships, events, and federal grants. These funds are not reported through the State budget process. Since fiscal 2016, TEDCO's responsibilities have expanded to include the administration of the MVF, thereby adding special funds to its appropriation.

It is difficult to measure the true success of TEDCO's programs, or if State funding is adequate, without complete information about TEDCO's other sources of funding. Many of TEDCO's programs that are funded with State general funds are also supplemented with the corporation's own nonbudgeted funds. For example, TEDCO's TCF is funded by about \$600,000 in general funds each year, and supplemented by some amount of TEDCO funds each year. Performance measures related to this program are reported annually through the State's Managing for Results process as shown prior in this analysis. Fluctuations in the performance outcomes are difficult to analyze without consistent and transparent reporting of the complete funding support of the program. It should be noted that the corporation provides information about their nonbudgeted funds when asked. However, a more systemic, consistent, and transparent approach would better inform budget decision making. This is especially important in light of TEDCO's increasing responsibilities.

**DLS recommends that the budget committees adopt committee narrative requesting a multi-agency effort to develop a plan that will provide consistent and transparent reporting of TEDCO nonbudgeted funds through the State budget process.**

## ***Recommended Actions***

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1. Adopt the following narrative:

**Report on Nonbudgeted Funds:** The Department of Legislative Services (DLS), the Department of Budget and Management (DBM), and the Maryland Technology Development Corporation (TEDCO) should examine the most appropriate and transparent means for providing annual information on TEDCO's nonbudgeted funds. The agencies should consider reporting requirements that do not compromise TEDCO's status as a quasi-public agency, but best inform the budgetary decisions required for State funding levels. The agencies should recommend a reporting approach that will be reflected in TEDCO's fiscal 2019 budget submission.

<b>Information Request</b>	<b>Authors</b>	<b>Due Date</b>
Report on TEDCO nonbudgeted funds	DLS DBM TEDCO	With the submission of TEDCO's fiscal 2019 budget request

2. Adopt the following narrative:

**Maryland Venture Fund Annual Report:** The statutory requirements for the Maryland Venture Fund's (MVF) annual report are limited to information on the InvestMaryland Program. However, this encompasses only a portion of the funds housed within the MVF. The budget committees are concerned that the most complete information be available and transparent in order to make informed budgetary and policy decisions. The annual report should include complete investment, fair market value, and return on investment data on all funds housed within the MVF; including funds related to the InvestMaryland Program, the legacy Enterprise Fund, federal funds under the State Small Business Credit Initiative, and other any funds credited to the MVF.

<b>Information Request</b>	<b>Author</b>	<b>Due Date</b>
Report on detailed investment information on the MVF	Maryland Technology Development Corporation	With the submission of the annual report each year beginning with the fiscal 2017 report



## ***Updates***

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### **1. Maryland Stem Cell Research Program**

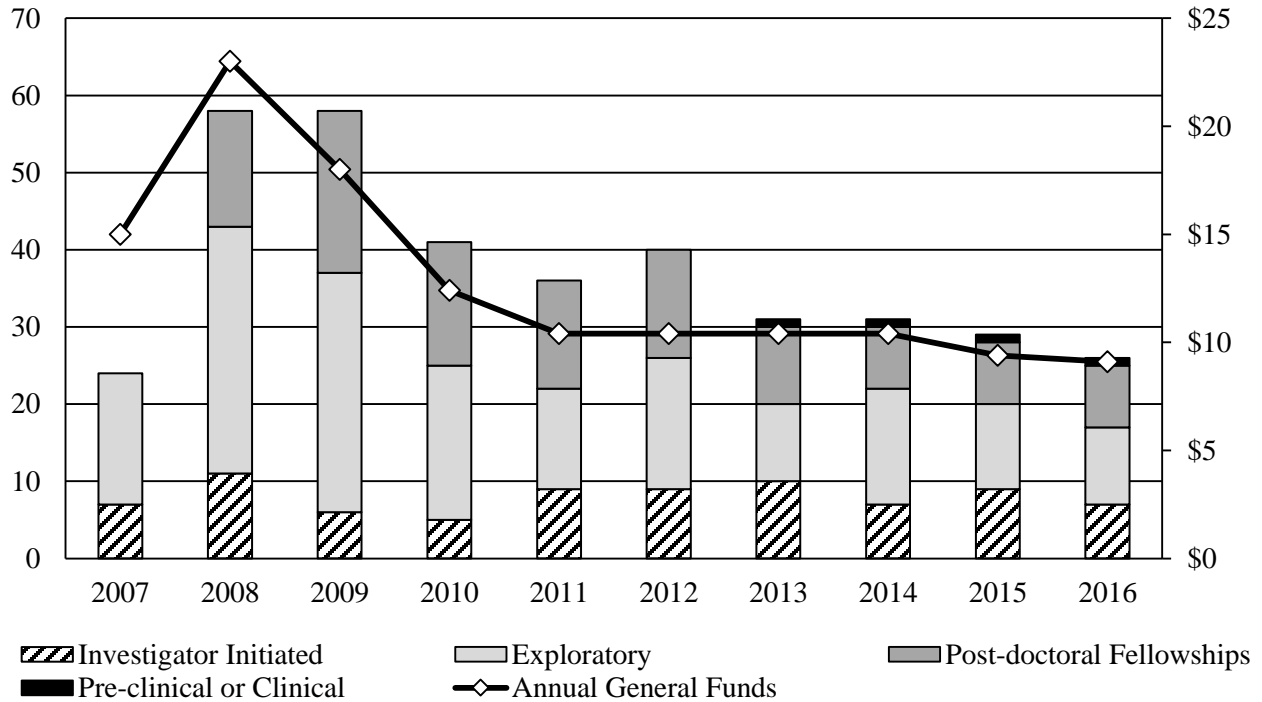
The Stem Cell Research Fund was established by Chapter 19 to support stem cell research and development at Maryland research institutions or private companies. The Stem Cell Research Commission reviews the proposed research process for applicant projects and makes recommendations to the TEDCO board about research grant awards. The research commission includes 15 members, as directed by statute, who include the Attorney General or designee, patient advocates, individuals with experience in biotechnology, scientists who work for the University System of Maryland and JHU and do not engage in stem cell research, bioethicists, and individuals with expertise in biomedical ethics as it relates to religion. Several commission members work at institutions that are applying for funding. Therefore, the commission has adopted conflict of interest guidelines to help members avoid inappropriately influencing commission decisions.

The fiscal 2018 allowance includes \$8.2 million in general funds to support grants under the Stem Cell Research Fund. This is a decrease of \$893,000 from level funding for fiscal 2017. This is the lowest amount of annual funding since the inception of the program.

**Exhibit 6** shows the history of the general funds and grant awards under the program. Most of the available funds are granted for exploratory research. However, the number of these grants is declining while the number of post-doctoral grants remains fairly constant. Because the maximum awards for post-doctoral grants are smaller, it allows the corporation to provide more grants with the same or reduced amount of funding. Funding for the program was \$9.1 million in fiscal 2016. In that year, the fund received 166 applications for funding and approved 26: 7 investigator-initiated research grants; 10 exploratory research grants; 8 post-doctoral grants; and 1 pre-clinical research grant. The commission was only able to fund 16% of applications, the lowest award rate since the program was created.

It should be noted that the commission has reorganized its grant programs and beginning in 2017 will offer a new set of awards aimed to a greater degree at commercialization.

**Exhibit 6**  
**Stem Cell Research Fund – History of Funded Awards**  
**Fiscal 2007-2016**  
**(\$ in Millions)**



Source: Maryland Technology Development Corporation

## 2. Major Grants

Committee narrative included in the 2008 JCR requested a complete listing of award recipients for all deals closed or projects approved in fiscal 2008. The corporation is continuing to provide this information for subsequent years. **Exhibit 7** shows such awards for all of TEDCO's programs, including those funded with general, federal, or nonbudgeted funds. Some programs, such as the Stem Cell Research Program, award funds over multiple years, therefore, funding levels do not necessarily match appropriation amounts.

**Exhibit 7**  
**Maryland Technology Development Corporation Award Recipients**  
**Fiscal 2016**

	<u><b>Award Amount</b></u>
<b>Cyber Security Investment Fund</b>	
ANRA Technologies LLC	\$100,000
OnSystem Logic LLC	100,000
Protenus Inc (2)	125,000
Secure Mentun Inc	100,000
A thru Z Inc	100,000
Fearless Labs LLC	100,000
Light Point Security LLC	100,000
Team Password	100,000
	<b>\$825,000</b>
<b>Incubator Assistance</b>	
Betamore LLC	\$18,000
Bethesda Green Inc.	16,000
BioHealth Innovation Inc.	10,000
Bowie Business Innovation Center	12,000
Emerging Technology Center Inc.	18,000
Maryland Center for Entrepreneurship	18,000
Maryland Economic Development Corporation	24,000
TowsonGlobal Incubator	10,000
UMBC Research Park Corporation, Inc.	18,000
UMCES	10,000
University of Maryland (College Park campus)	10,000
University of Baltimore	6,000
	<b>\$170,000</b>
<b>Life Science Investment Fund</b>	
Asclepix Therapeutics	\$200,000
Gel-e	200,000
Sonavex	200,000
Vasoptic Medical	200,000
	<b>\$800,000</b>
<b>Maryland Innovation Initiative</b>	
Accelevir Diagnostics	\$100,000
Ashvattha Therapeutics LLC	150,000
Avasys LLC	100,000
Baton LLC	88,200
Biomecite Diagnostics LLC	99,938
CoolStride LLC	100,000

*T50T01 – Maryland Technology Development Corporation*

	<u><b>Award Amount</b></u>
Edu MD	149,961
Glyscend Inc	150,000
Glyscend Inc	15,000
Hazel Analytics	149,670
ITVMD	14,911
Johns Hopkins University	2,214,641
MBM / Early Charm Ventures(Herzog)	15,000
MBM / Early Charm Ventures(Malone)	15,000
MBM/Booth	15,000
Natsar Pharma	150,000
Orablas LLC	150,000
Pataigin LLC	15,000
PathOTrak	150,000
Serenta Biotechnology LLC	15,000
Sonavex	100,000
Tarsier Optics Inc	150,000
University of Maryland, Baltimore	544,995
University of Maryland Baltimore County	280,000
University of Maryland, College Park	480,000
VakSea Inc	150,000
	<b>\$5,562,316</b>

**Rural Business Innovation Initiative**

Thor Longboards	\$9,715
Glycopure	7,665
Garrett Co Entrep Ctr	1,000
Salisbury University	1,000
3 Notch Chemicals	5,510
Bartron	6,450
True Chesapeake	10,596
Green Eyes	1,000
Plum Fragon	10,000
Luminescent MD LLC	7,477
Trideum BioSciences LLC	7,280
Phycin	9,428
RoosterBio	8,500
Poochon Scientific	7,500
Sentence Wheel	7,500
	<b>\$100,621</b>

*T50T01 – Maryland Technology Development Corporation*

	<u><b>Award Amount</b></u>
<b>Stem Cell Research Fund</b>	
BioCardia Inc	\$750,000
Hugo Moser Kennedy Krieger Research Institute	801,875
Johns Hopkins University	5,928,069
TheraCord LLC	466,325
University of Maryland, Baltimore	460,000
	<b>\$8,406,269</b>
<b>Technology Commercialization Fund</b>	
Artichoke LLC	\$100,000
Appian Medical Inc	100,000
Sickweather Inc	100,000
Peer Aspect LLC	100,000
Grip Boost LLC	100,000
ShapeU LLC	100,000
Sisu Global Health	100,000
Brinkbits Inc	100,000
ClassTracks Inc	100,000
Speak Agent Inc	99,993
Oh Mama LLC	100,000
emocha Mobile Health Inc	100,000
Cognitive Pro LLC	100,000
Z Advanced Computing	100,000
MF Fire Benefits LLC	100,000
Full Society LLC	100,000
Cobrain Company	125,000
The Sparo Corp	100,000
MockV Solutions Inc	100,000
Communication APptitude LLC	100,000
N&C Inc	100,000
Manta Biofuels LLC	100,000
	<b>\$2,224,993</b>
<b>Total</b>	<b>\$18,089,199</b>

UMBC: University of Maryland Baltimore County

UMCES: University of Maryland Center for Environmental Science

Source: Maryland Technology Development Corporation

**Appendix 1**  
**Current and Prior Year Budgets**  
**Maryland Technology Development Corporation**  
**(\$ in Thousands)**

	<b><u>General Fund</u></b>	<b><u>Special Fund</u></b>	<b><u>Federal Fund</u></b>	<b><u>Reimb. Fund</u></b>	<b><u>Total</u></b>
<b>Fiscal 2016</b>					
Legislative Appropriation	\$18,516	\$0	\$0	\$0	\$18,516
Deficiency Appropriation	0	0	0	0	0
Budget Amendments	1,151	16,387	0	0	17,539
Reversions and Cancellations	0	-9,817	0	0	-9,817
<b>Actual Expenditures</b>	<b>\$19,667</b>	<b>\$6,571</b>	<b>\$0</b>	<b>\$0</b>	<b>\$26,238</b>
<b>Fiscal 2017</b>					
Legislative Appropriation	\$19,467	\$7,345	\$0	\$0	\$26,812
Cost Containment	0	0	0	0	0
Budget Amendments	0	0	0	0	0
<b>Working Appropriation</b>	<b>\$19,467</b>	<b>\$7,345</b>	<b>\$0</b>	<b>\$0</b>	<b>\$26,812</b>

Note: Does not include targeted reversions, deficiencies, and contingent reductions. Numbers may not sum to total due to rounding.

## **Fiscal 2016**

The original fiscal 2016 appropriation was altered significantly due to the impact of Chapter 141 of 2015, which transferred the operation of the Maryland Venture Fund (\$16.4 million in special funds) and the Maryland Biotechnology grant program (\$1.2 million in general funds) to the corporation. The funds were transferred by budget amendment. However, the corporation did not commit the entire amount available for business investment and therefore canceled approximately \$9.8 million in special funds.

**Appendix 2**  
**Object/Fund Difference Report**  
**Maryland Technology Development Corporation**

<u>Object/Fund</u>	<u>FY 16 Actual</u>	<u>FY 17 Working Appropriation</u>	<u>FY 18 Allowance</u>	<u>FY 17 - FY 18 Amount Change</u>	<u>Percent Change</u>
<b>Objects</b>					
08 Contractual Services	\$ 0	\$ 12,093	\$ 15,141	\$ 3,048	25.2%
12 Grants, Subsidies, and Contributions	26,238,248	26,799,919	25,806,919	-993,000	-3.7%
<b>Total Objects</b>	<b>\$ 26,238,248</b>	<b>\$ 26,812,012</b>	<b>\$ 25,822,060</b>	<b>-\$ 989,952</b>	<b>-3.7%</b>
<b>Funds</b>					
01 General Fund	\$ 19,667,480	\$ 19,467,480	\$ 18,474,480	-\$ 993,000	-5.1%
03 Special Fund	6,570,768	7,344,532	7,347,580	3,048	0%
<b>Total Funds</b>	<b>\$ 26,238,248</b>	<b>\$ 26,812,012</b>	<b>\$ 25,822,060</b>	<b>-\$ 989,952</b>	<b>-3.7%</b>

Note: Does not include targeted reversions, deficiencies, and contingent reductions.



**Appendix 3  
Fiscal Summary  
Maryland Technology Development Corporation**

<u>Program/Unit</u>	<u>FY 16 Actual</u>	<u>FY 17 Wrk Approp</u>	<u>FY 18 Allowance</u>	<u>Change</u>	<u>FY 17 - FY 18 % Change</u>
01 Tech. Development, Transfer and Commercialization	\$ 4,774,480	\$ 4,674,480	\$ 4,574,480	-\$ 100,000	-2.1%
03 Maryland Stem Cell Research Fund	9,093,000	9,093,000	8,200,000	-893,000	-9.8%
04 Maryland Innovation Initiative	4,900,000	4,800,000	4,800,000	0	0%
05 Cybersecurity Investment Fund	900,000	900,000	900,000	0	0%
06 Enterprise Fund Administration	1,332,439	1,344,532	1,347,580	3,048	0.2%
07 Enterprise Investment Fund	5,238,329	6,000,000	6,000,000	0	0%
<b>Total Expenditures</b>	<b>\$ 26,238,248</b>	<b>\$ 26,812,012</b>	<b>\$ 25,822,060</b>	<b>-\$ 989,952</b>	<b>-3.7%</b>
General Fund	\$ 19,667,480	\$ 19,467,480	\$ 18,474,480	-\$ 993,000	-5.1%
Special Fund	6,570,768	7,344,532	7,347,580	3,048	0%
<b>Total Appropriations</b>	<b>\$ 26,238,248</b>	<b>\$ 26,812,012</b>	<b>\$ 25,822,060</b>	<b>-\$ 989,952</b>	<b>-3.7%</b>

Note: Does not include targeted reversions, deficiencies, and contingent reductions.