

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

***Operating Budget Data***

(\$ in Thousands)

	<u>FY 09</u> <u>Actual</u>	<u>FY 10</u> <u>Working</u>	<u>FY 11</u> <u>Allowance</u>	<u>FY 10-11</u> <u>Change</u>	<u>% Change</u> <u>Prior Year</u>
General Fund	\$22,227	\$15,743	\$15,858	\$115	0.7%
<b>Adjusted General Fund</b>	<b>\$22,227</b>	<b>\$15,743</b>	<b>\$15,858</b>	<b>\$115</b>	<b>0.7%</b>
<b>Adjusted Grand Total</b>	<b>\$22,227</b>	<b>\$15,743</b>	<b>\$15,858</b>	<b>\$115</b>	<b>0.7%</b>

- The fiscal 2011 allowance is \$15.9 million, an increase of approximately \$115,000. Most of the increase is attributable to an additional \$90,000 in the Maryland Technology Transfer Fund for grants to early stage technology companies. The Maryland Industrial Partnership Program declines by \$50,000 from the fiscal 2010 cost containment level.
- The fiscal 2011 allowance for the Stem Cell Research program is \$12.4 million, a \$50,000 increase from the cost containment level for fiscal 2010.
- The Maryland Technology Development Corporation (TEDCO) does not report personnel data through the State budget system because the corporation's employees are not State employees; however, the corporation reports that it has 10 State-funded positions and 1 federally funded position. This is 1 less position than was reported at the beginning of fiscal 2010.

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

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## *Analysis in Brief*

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### Major Trends

**Significant Increase in Follow-on Funding in 2009:** A measure of the success of the funding provided under the Maryland Technology Transfer Fund is the extent to which recipients can secure follow-on funding. Despite a lagging economy, fiscal 2009 marked a new high in this measure.

**The Maryland Technology Development Corporation Offers Technology Showcases:** The Maryland Technology Development Corporation (TEDCO) offers showcases in order to connect federal laboratories to local entrepreneurs, business leaders, investors, and economic development officials. However, TEDCO's performance measures do not include any measures showing the efficacy of these events.

### Issues

**The Stem Cell Research Fund:** In fiscal 2009, the Stem Cell Research Fund supported 58 research grants that were approved from 147 applications. The Stem Cell Research Commission is in receipt of 193 letters of intent for fiscal 2010. The program has received national attention as the State hosted the 2009 World Stem Cell Summit. **The Department of Legislative Services (DLS) recommends that TEDCO brief the budget committees on the activity under the Stem Cell Research Fund. DLS also recommends that funding for the Stem Cell Research Fund be reduced in fiscal 2011 as a cost containment measure.**

### Recommended Actions

	<u>Funds</u>
1. Delete funds under the Maryland Industrial Partnership Program.	\$ 500,000
2. Reduce funds under the Maryland Stem Cell Research Program.	6,200,000
<b>Total Reductions</b>	<b>\$ 6,700,000</b>

## **Updates**

**Major Grants:** Committee narrative included in the 2008 *Joint Chairmen's Report* 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.

**Outside Funding for Fiscal 2010 Totals \$1.6 Million:** TEDCO aims to secure federal and other funds to support technology transfer and development efforts. Fiscal 2010 outside funding totals \$1.6 million, and cumulative funding since fiscal 2001 represents over 15 to 1 leverage of TEDCO funds.

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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 non-equity 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.

In 2001, TEDCO was 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.

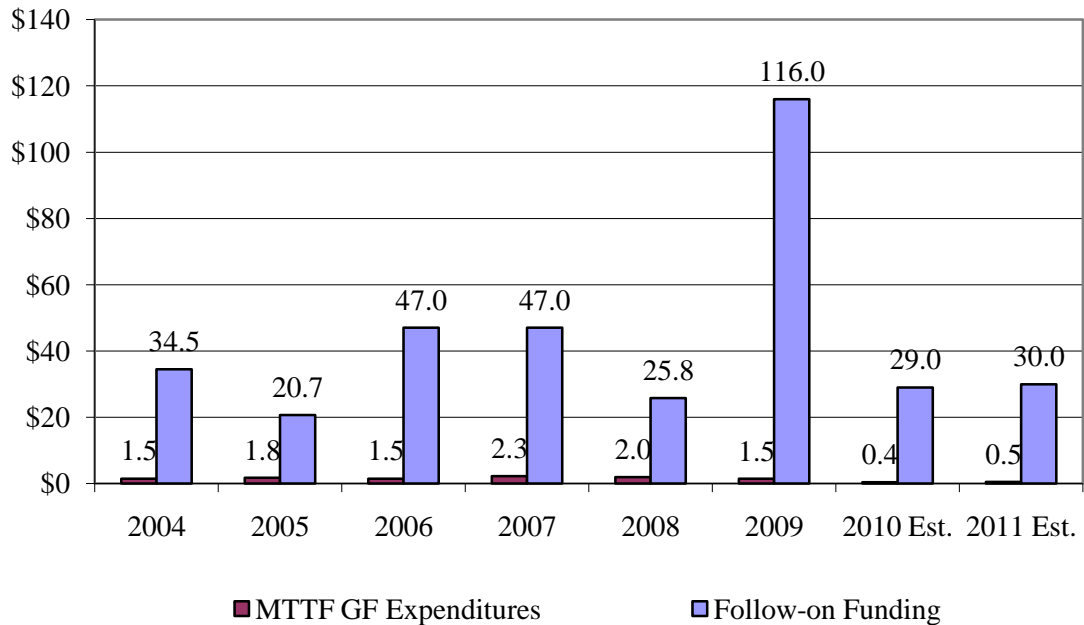
TEDCO supports stem cell research and development at Maryland's research universities and private sector research corporations in accordance with the Maryland Stem Cell Research Act of 2006. The Maryland Stem Cell Commission established an independent scientific peer review committee to review, evaluate,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

**Performance Analysis: Managing for Results**

**Significant Increase in Follow-on Funding in 2009**

The Maryland Technology Transfer Fund (MTTF) provides seed investments to early stage technology companies that are economically viable but do not yet have the scope for a venture capital investment. The companies must partner with universities in Maryland or federal laboratories to receive funds or must be a tenant in a technology incubator. A measure of success for MTTF 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, and Department of Business and Economic Development (DBED) funds. TEDCO tracks leveraged funds for up to seven years for each MTTF recipient. **Exhibit 1** shows follow-on funding for MTTF recipients relative to the amount of general fund investment in the program.

**Exhibit 1**  
**Follow-on Funding for Recipients of TEDCO Investments**  
**Fiscal 2004-2011**  
**(\$ in Millions)**



GF: general fund  
MTTF: Maryland Technology Transfer Fund  
TEDCO: Maryland Technology Development Corporation

Note: Follow-on funding is measured for companies receiving Maryland Technology Transfer Fund awards.

Source: Maryland Technology Development Corporation; Governor’s Budget Books, Fiscal 2007-2011

It should be noted that the MTTF 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. This measure is of particular importance to the corporation because success in raising downstream funding is a key criterion in evaluating second award proposals. In fiscal 2009, two of the corporation’s MTTF recipients received significant private venture capital funding, sending the follow-on funding performance measure to a new high mark. Follow-on funding is expected to return to a more typical level in fiscal 2010 and 2011.

## **TEDCO Offers Technology Showcases**

TEDCO has a stated goal of increasing technology transfer and commercialization. To work toward this goal, the corporation promotes institutional research to entrepreneurs through holding showcases. Under its Federal Laboratory Partnership Program, TEDCO “showcases” federal technologies, capabilities, and needs to local entrepreneurs, business leaders, angel and venture investors, and economic development professionals. The goal is to facilitate the transfer technologies that originate in federal laboratories to the market place.

As a Managing for Result performance measure, the corporation reports the number of showcases held each fiscal year. Typically, TEDCO holds about four or five such events every year. The measures do not show, however, any data showing the success of the showcases. The corporation should consider reporting number of attendees, any partnerships that result from the events, and any technologies that result in commercialization.

## **Fiscal 2010 Actions**

### **Impact of Cost Containment**

The fiscal 2010 cost containment effort reduced TEDCO’s original appropriation by \$3,325,000 in general funds. Of this amount, \$3.0 million was eliminated from the stem cell research program, leaving \$12.4 million for the fiscal year. The incubator support program was reduced by half, leaving \$125,000 for the program. Finally, \$200,000 was reduced from the Maryland Industrial Partnership program. This reduction leaves \$550,000 to provide grants for University of Maryland research based projects designed to help companies develop new products.

## **Proposed Budget**

The fiscal 2011 allowance is budgeted as a State general fund grant of \$15.9 million. Of this amount, \$12.4 million is dedicated to the Stem Cell Research Fund, an increase of \$50,000. The remaining \$3.5 million in general funds is for Technology Development, Transfer, and Commercialization, which represents an increase of \$65,000. **Exhibit 2** summarizes the major changes and shows the corporation’s general fund budget by program.

The corporation does not submit personnel data through the State budget process, but the agency reports that it has 10 full-time State funded positions, 2 of which are dedicated to the Stem Cell Research program. Salaries and fringes have fallen over \$70,000 between fiscal 2009 and the fiscal 2011 allowance due to the agency’s decision to lower expenses by eliminating one position in fiscal 2010.

**Exhibit 2**  
**TEDCO – General Fund Budget**  
**Fiscal 2008-2011**  
**(\$ in Thousands)**

<b>Operations</b>	<b>2008</b>	<b>2009</b>	<b>Working Approp. 2010</b>	<b>Allowance 2011</b>	<b>Change 2010-11</b>	<b>% Change 2010-11</b>
Program Development and Outreach	\$241	\$237	\$210	\$198	-\$12	-5.7%
Technology Transfer Programs and Services	1,337	1,383	1,398	1,303	-95	-6.8%
Business Incubation	679	638	527	657	130	24.6%
Executive Management	344	349	308	310	2	0.5%
<b>Operations Subtotal</b>	<b>\$2,601</b>	<b>\$2,607</b>	<b>\$2,443</b>	<b>\$2,468</b>	<b>\$25</b>	<b>1.0%</b>
<b>Investments</b>						
Maryland Technology Transfer Fund	\$1,950	\$1,450	\$400	\$490	\$90	22.5%
University Technology Development Fund	400	200	0	0	0	0.0%
University Intellectual Property Support Fund	75	75	0	0	0	0.0%
Working Capital Loan Fund	0	0	0	0	0	0.0%
Maryland Industrial Partnership Program	0	0	550	500	-50	-9.1%
<b>Investments Subtotal</b>	<b>\$2,425</b>	<b>\$1,725</b>	<b>\$950</b>	<b>\$990</b>	<b>\$40</b>	<b>4.2%</b>
Capital – Business Incubator Investment Program	\$0	0	0			
<b>Total Operations, Investments, and Capital</b>	<b>\$5,026</b>	<b>\$4,332</b>	<b>\$3,393</b>	<b>\$3,458</b>	<b>\$65</b>	<b>1.9%</b>
Stem Cell Research Fund	\$23,000	\$18,000	\$12,350	\$12,400	\$50	0.4%
<b>Grand Total</b>	<b>\$28,026</b>	<b>\$22,332</b>	<b>\$15,743</b>	<b>\$15,858</b>	<b>\$115</b>	<b>0.7%</b>

Source: Maryland Technology Development Corporation

### **General Funds Support One of Four Programs**

TEDCO has four primary investment programs that are or have been supported by general funds. Overall, investment programs increase slightly in the fiscal 2011 allowance, not including the stem cell research fund or the Maryland Industrial Partnership program discussed later in this analysis.

**Maryland Technology Transfer Fund:** MTTF awards seed funding to early-stage companies that partner with universities or federal laboratories in Maryland or companies that are tenants in technology incubators. The allowance includes \$490,000 for this program. This represents a \$90,000 increase from fiscal 2010. MTTF awardee companies must have a commercialization

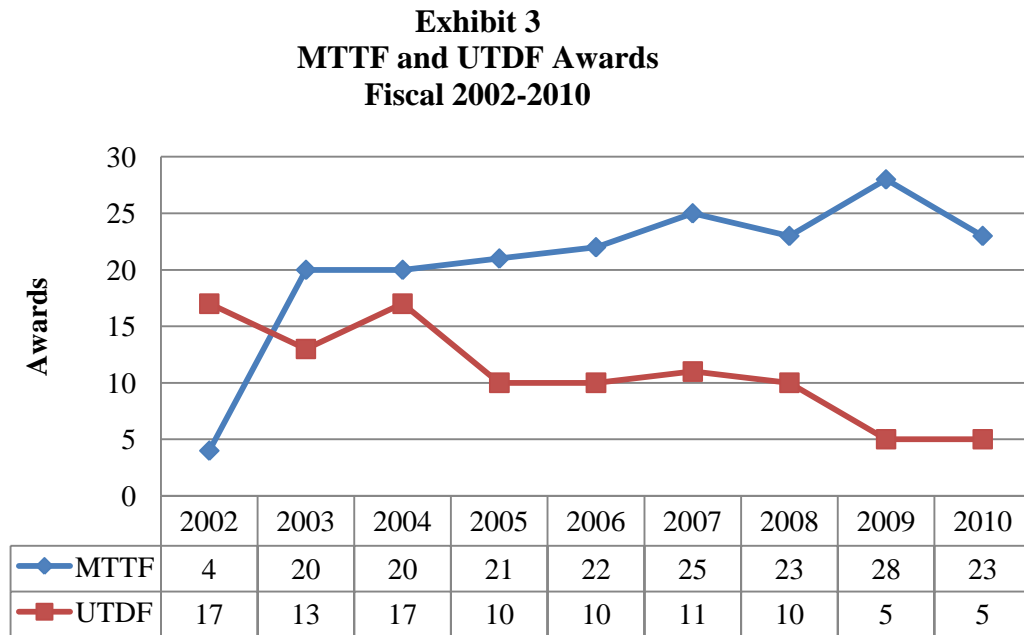
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strategy to qualify, and awards are up to \$75,000 in non-equity investments per company. The companies serve as a “farm team” for DBED’s Challenge program, which targets businesses at a later stage of development. MTTF awardees also often go on to participate in the Maryland Industrial Partnerships program at the University of Maryland, College Park. The corporation advises that it will subsidize the general fund component of this program with a portion of its nonbudgeted funds.

**University Technology Development Fund:** The University Technology Development Fund (UTDF) provides pre-seed funding for technologies at the earliest stages of the development process. For the second year, the allowance provides no general funds for this program. Funds for this program were reduced in fiscal 2009 from the original appropriation of \$400,000 to \$200,000 as a result of cost containment. Again, the corporation advises that it will subsidize this program with a portion of its nonbudgeted funds.

Program awards go to university technology licensing offices, with initial awards up to \$50,000 each. The offices use the funds to support early stage proof of concept testing, prototype development, feasibility demonstrations, and similar activities.

**Exhibit 3** shows the number of program awards under the MTTF and the UTDF. The corporation concentrates more of its funding on MTTF recipients.



MTTF: Maryland Technology Transfer Fund  
 UTDF: University Technology Development Fund

Source: Maryland Technology Development Corporation

**University Intellectual Property Support Fund:** The Maryland University Intellectual Property Support Fund provides pre-seed funding for universities' patent application activities. TEDCO's three-year, \$500,000 annual commitment to the program ended in fiscal 2006. However, funding for this program continued in the fiscal 2007 through 2009 budgets, albeit at a lower level. The fiscal 2011 allowance includes no general funds for this program.

**Working Capital Loan Fund:** The working capital revolving loan fund does not receive funds in the allowance because initial funding sufficiently capitalized the program to provide loans to incubator companies. TEDCO received a \$325,000 start-up grant from the federal Economic Development Administration for the fund, and TEDCO provided a \$325,000 match. The State provided another \$500,000 in fiscal 2007 to ensure that all areas of the State may be served. The fund provides working capital loans of \$15,000 to \$50,000 to companies.

### **Maryland Industrial Partnership Program**

The fiscal 2011 allowance includes \$500,000 in general funds to be transferred to the University of Maryland's Maryland Industrial Partnership program. This program is designed to accelerate commercialization by matching funds for university-based research projects that help companies develop new projects. Prior to fiscal 2010, these funds were budgeted in the Maryland Higher Education Commission and passed through to the university. Given TEDCO's expertise with technology commercialization, it was deemed a better fit to be overseen by the corporation. However, it remains a pass through grant, and TEDCO exerts little control over how funds are spent.

It should be noted that the funding level for this program was reduced from \$1 million in fiscal 2009, to \$750,000 in the original fiscal 2010 appropriation. Cost containment in fiscal 2010 reduced that appropriation to \$550,000. Funding falls again in the fiscal 2011 allowance to \$500,000.

## ***Issues***

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### **1. The Stem Cell Research Fund**

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. In July 2006, the members of the Stem Cell Research Commission were announced. This group reviews the proposed research process for applicant projects and makes final decisions 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 (USM) and the Johns Hopkins University 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, and so the commission has adopted conflict of interest guidelines to help members avoid inappropriately influencing commission decisions.

The fiscal 2011 allowance includes \$12.4 million in general funds to support grants under the Stem Cell Research Fund. The commission is authorized to award three types of grants:

- **Investigator-initiated Research Grants** are designed for investigators with preliminary data and well-established research in the stem cell field. The maximum annual grant amount is \$300,000 a year, for up to five years.
- **Exploratory Research Grants** are designed for investigators who are new to the stem cell field and for exploratory projects without preliminary data. The maximum annual grant amount is \$100,000 a year, for up to two years.
- **Post-doctoral Research Grants** are for exceptional pre-doctoral students and post-doctoral fellows who wish to conduct post-doctoral research on human stem cells in the State of Maryland with maximum support of \$55,000 a year, for up to two years.

**Exhibit 4** shows the history of the general funds and grant awards under the program. Most of the available funds are granted for exploratory research. Since their introduction in fiscal 2008, post-doctoral research grants are growing in popularity. Because the maximum awards are smaller, it allows the corporation to provide more grants with the same or reduced amount of funding.

Funding for the program was \$18.0 million in fiscal 2009. The fund received 147 applications for funding and approved 58: 6 investigator-initiated research grants, 31 exploratory research grants, and 21 post-doctoral grants. In fiscal 2010, TEDCO received 193 letters of intent in response to its request for applications. However, funding for the program has fallen to \$12.4 million due to cost containment. Applications will be reviewed by a independent scientific review panel by April 2010.

**Exhibit 4**  
**Stem Cell Research Fund**  
**History of Funded Awards**  
**Fiscal 2007-2009**

	<u>2007</u>	<u>2008</u>	<u>2009</u>
Investigator Initiated	7	11	6
Exploratory	17	32	31
Post Doctoral Fellowships	0	15	21
<b>Total Grants</b>	<b>24</b>	<b>58</b>	<b>58</b>
<b>Annual General Funds</b>	<b>\$15 million</b>	<b>\$23 million</b>	<b>\$18 million</b>

Source: Maryland Technology Development Corporation

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The 2009 World Stem Cell Summit was held in Baltimore City in September 2009, hosted, in part, by Johns Hopkins University, the University System of Maryland, TEDCO and DBED. At the summit, TEDCO announced a collaboration on stem cell research with the California Institute for Regenerative Medicine. The goal of the agreement is to make it easier for researchers in California and Maryland to collaborate and obtain joint funding to broaden the potential pool of expertise that can be applied toward research in a specific area.

**The Department of Legislative Services (DLS) recommends that TEDCO brief the budget committees on the activity under the Stem Cell Research Fund.**

**DLS also recommends that funding for the Stem Cell Research Fund be reduced in fiscal 2011 as a cost containment measure.**

## ***Recommended Actions***

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	<b><u>Amount Reduction</u></b>	
1. Delete funds under the Maryland Industrial Partnership Program. These funds represent a pass-through grant to the University of Maryland to promote commercialization of university-based technologies. The university system can use its own funds to promote commercialization of its products.	\$ 500,000	GF
2. Reduce funds under the Maryland Stem Cell Research program as a cost containment measure. This action will assist in alleviating the State's current budgetary concerns, while still allowing the continuance of this discretionary program at a more modest level.	6,200,000	GF
<b>Total General Fund Reductions</b>	<b>\$ 6,700,000</b>	

## Updates

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### 1. Major Grants

Committee narrative included in the 2008 *Joint Chairmen’s Report* 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 5** shows such awards for all TEDCO’s programs, including those funded by general, nonbudgeted, and federal funds. Some programs, such as the Stem Cell Research Program, awards funds by multiple years; therefore, funding levels do not necessarily match appropriation amounts.

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**Exhibit 5**  
**Maryland Technology Development Corporation**  
**Fiscal 2009**

	<u>Award Amount</u>	<u>Funding by Other Sources</u>	<u>State and TEDCO Funding</u>
<b>Incubator Feasibility Study</b>			
Emerging Technology Centers	\$5,000.00		\$5,000.00
	<b>\$5,000.00</b>		<b>\$5,000.00</b>
<b>Incubator Assistance</b>			
Frederick Innovative Tech Center	\$25,000.00		\$25,000.00
University of Baltimore	16,000.00		16,000.00
Eastern Shore Entrepreneurship Center	15,000.00		15,000.00
Emerging Technology Center	19,950.00		19,950.00
Hagerstown – Tech Innovation Center	19,950.00		19,950.00
Garrett Information Enterprise Center	16,625.00		16,625.00
Neotech – Howard CO EDA	16,625.00		16,625.00
TowsonGlobal	9,975.00		9,975.00
UMBC Technology Center (bwtech)	19,950.00		19,950.00
PG Co Tech Assistance Center	16,625.00		16,625.00
Frederick Innovative Tech Center	16,625.00		16,625.00
Chesapeake Innovation Center	9,975.00		9,975.00
Univ of Maryland, College Park	19,950.00		19,950.00
	<b>\$222,250.00</b>		<b>\$222,250.00</b>
<b>Maryland Technology Transfer/Commercialization Fund</b>			
Inova Technologies	\$75,000.00		\$75,000.00
Integrated Biotherapeutics	75,000.00		75,000.00
Innoscion LL	75,000.00		75,000.00
BuddyCast	75,000.00		75,000.00
CrispTek	75,000.00		75,000.00
Spiralcat	75,000.00		75,000.00
Next Development	75,000.00		75,000.00

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	<u>Award Amount</u>	<u>Funding by Other Sources</u>	<u>State and TEDCO Funding</u>	
Applied Sensor R&D Corp	74,495.24		74,495.24	
CCC Diagnostics	75,000.00		75,000.00	
Encore Path Inc	53,355.00		53,355.00	
American Dynamics Flight Systems Inc.	75,000.00		75,000.00	
Nanorods, LLC	74,160.00		74,160.00	
Aparna Biosciences Corporation	75,000.00		75,000.00	
Resensys, LLC	74,700.00		74,700.00	
AccuStrata, Inc	75,000.00		75,000.00	
Oxicool Inc	75,000.00		75,000.00	
Us Languages and Cultures Net, LLC	75,000.00		75,000.00	
Oculus Labs Inc	75,000.00		75,000.00	
Fyodor Biotechnologies	75,000.00		75,000.00	
Vorbeck Materials Corporation	75,000.00		75,000.00	
Tendyne	74,927.56		74,927.56	
Rafagen	75,000.00		75,000.00	
Green Eyes LLC	72,411.20		72,411.20	
SD Nanosciences	74,999.00		74,999.00	
Chesapeake Micro Products	63,500.00		63,500.00	
Leukosight Inc (J&J)	75,000.00	\$75,000.00	150,000.00	(1)
BioMarker Strategies, LLC (J&J)	37,500.00	37,500.00	75,000.00	(1)
ZGI Inc	75,000.00		75,000.00	
Theratxis	75,000.00		75,000.00	
Columbia Biosystems, Inc.	75,000.00		75,000.00	
	<b>\$2,175,048.00</b>	<b>\$112,500.00</b>	<b>\$2,287,548.00</b>	
<b>Ft. Detrick Technology Transfer Initiative (Round 2)</b>				
Aid Networks, LLC	\$50,000.00		\$50,000.00	(2)
CynerGene	50,000.00		50,000.00	(2)
BioMedica Management Corp	50,000.00		50,000.00	(2)
Dsbyte Solutions LLC	50,000.00		50,000.00	(2)
Juxtopia	50,000.00		50,000.00	(2)
Imagilin Technology LLC	50,000.00		50,000.00	(2)
Intelligent Substrates, Inc	50,000.00		50,000.00	(2)
Bacilligin	50,000.00		50,000.00	(2)
HeMemics	50,000.00		50,000.00	(2)
BioAssay	50,000.00		50,000.00	(2)
	<b>\$500,000.00</b>		<b>\$500,000.00</b>	
<b>Maryland Research and Applied Sciences Consortium (Maryland's HBCUs)</b>				
UMES – Dr. Hearne	\$81,290.00		\$81,290.00	(2)
MSU – Dr. Wachira	7,326.00		7,326.00	(2)
Sojourner–Douglas College – Dr. Thomas	77,000.00		77,000.00	(2)
	<b>\$165,616.00</b>		<b>\$165,616.00</b>	

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	<u>Award Amount</u>	<u>Funding by Other Sources</u>	<u>State and TEDCO Funding</u>
<b>University Technology Development Fund</b>			
UMBC – T Farquhar	\$50,000.00		\$50,000.00
UMBC – X Ge	49,993.00		49,993.00
UMBC – Theresa Good	50,000.00		50,000.00
JHU – Kelvin Hong	50,000.00		50,000.00
UMCP – Raghavan (J&J)	25,000.00	\$25,000.00	50,000.00 (1)
NIH – Ravin, Hoepner, Rogers (Redstones)	15,000.00		15,000.00
	<b>\$239,993.00</b>	<b>\$25,000.00</b>	<b>\$264,993.00</b>
<b>TechStart Program</b>			
JHU – Zilliox, Olsen, Kubisen	\$15,000.00		\$15,000.00
Innovate Tech Ventures	15,000.00		15,000.00
JHU – Chatterjee/Pal/Penfield	15,000.00		15,000.00
UMBI – Payne/Nye/Payne	15,000.00		15,000.00
UMCP – DiMarzo	15,000.00		15,000.00
JHU – Silber (Salvacor Tech)	15,000.00		15,000.00
Thesia Medical	7,500.00		7,500.00
UMB – Raj Shekhar	15,000.00		15,000.00
UMB – Susan Keay	15,000.00		15,000.00
UMB – Njar, Paterson, Good	15,000.00		15,000.00
	<b>\$142,500.00</b>		<b>\$142,500.00</b>
<b>ACTIVATE</b>	\$75,000.00		\$75,000.00
	<b>\$75,000.00</b>		<b>\$75,000.00</b>
Ignition 72	\$50,000.00		\$50,000.00
Biomedica Management Corp.	50,000.00		50,000.00
Individual Health Solutions	50,000.00		50,000.00
Encore Path LLC	25,000.00	\$25,000.00	50,000.00 (3)
	<b>\$175,000.00</b>	<b>\$25,000.00</b>	<b>\$200,000.00</b>
2010 NASVF Conference	\$25,000.00		\$25,000.00
	<b>\$25,000.00</b>		<b>\$25,000.00</b>
<b>Totals</b>	<b>\$3,725,407.00</b>	<b>\$162,500.00</b>	<b>\$3,887,907.00</b>
<b>Stem Cell Research Fund</b>			
<i>Investigator Initiated Grants (5-year funding)</i>			
JHU – Angelo All	\$733,400.00		\$733,400.00
JHU – Linzhao Cheng	1,695,570.00		1,695,570.00
JHU – Valina Dawson	1,725,000.00		1,725,000.00
JHU – Roger Johns	1,725,000.00		1,725,000.00
JHU – Guo-li Ming	1,725,000.00		1,725,000.00
UMB – Ricardo Feldman	1,725,000.00		1,725,000.00

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	<u>Award Amount</u>	<u>Funding by Other Sources</u>	<u>State and TEDCO Funding</u>
<i>Exploratory Grants (2-year funding)</i>			
Global Stem – Jonathan Auerbach	\$230,000.00		\$230,000.00
JHU – Michael Betenbaugh	230,000.00		230,000.00
JHU – Maria Canto–Soler	230,000.00		230,000.00
JHU – Alan Friedman	200,000.00		200,000.00
JHU – Jordan Green	229,812.00		229,812.00
JHU – John Harmon	230,000.00		230,000.00
JHU – Yoon–Young Jang	230,000.00		230,000.00
JHU – Mihoko Kai	230,000.00		230,000.00
JHU – Irina Kolosova	230,000.00		230,000.00
JHU – Gerard Luty	230,000.00		230,000.00
JHU – Hai–Quan Mao	230,000.00		230,000.00
JHU – Nicholas Maragakis	230,000.00		230,000.00
JHU – Avindra Nath	230,000.00		230,000.00
JHU – Sridhar Nimmagadda	230,000.00		230,000.00
JHU – Linda Resar	230,000.00		230,000.00
JHU – Lewis Romer	230,000.00		230,000.00
JHU – Hong Song	229,988.00		229,988.00
JHU – Karl Womer	230,000.00		230,000.00
UMB – Alexey Belkin	229,964.00		229,964.00
UMB – Chunzhang Cao	230,000.00		230,000.00
UMB – Curt Civin	230,000.00		230,000.00
UMB – Da–Wei Gong	230,000.00		230,000.00
UMB – Feng Jiang	230,000.00		230,000.00
UMB – Elizabeth Powell	230,000.00		230,000.00
Hugo Moser – Anne Comi	199,951.00		199,951.00
Hugo Moser – Michael Shamblott	230,000.00		230,000.00
Hugo Moser – Shuli Xia	230,000.00		230,000.00
Virxsys – Jenice D'Costa	230,000.00		230,000.00
UMBI – Mariusz Karbowski	230,000.00		230,000.00
UMBI – Xuehong Xu	230,000.00		230,000.00
JHU – Joelle Hillion	230,000.00		230,000.00
<i>Post-Doctoral Fellowship Grants (2-year funding)</i>			
UMBI – Julio Altamirano	\$110,000.00		\$110,000.00
JHU – Ahmed Mohyeldin	110,000.00		110,000.00
JHU – Amy Belton	110,000.00		110,000.00
JHU – Paul Burrridge	110,000.00		110,000.00
JHU – Tara Deans	110,000.00		110,000.00
JHU – Nini Guo	110,000.00		110,000.00
JHU – Tomas Garzon–Muvdi	110,000.00		110,000.00
JHU – Woon Ryong Kim	110,000.00		110,000.00
JHU – Ju Young Kim	110,000.00		110,000.00
JHU – Xingyu Liu	110,000.00		110,000.00
JHU – Rea Soon Park	110,000.00		110,000.00

*T50T01 – Maryland Technology Development Corporation*

	<u>Award Amount</u>	<u>Funding by Other Sources</u>	<u>State and TEDCO Funding</u>
JHU – Margaret Showel	110,000.00		110,000.00
JHU – Guoming Sun	110,000.00		110,000.00
JHU – Karl Wahlin	110,000.00		110,000.00
JHU – Yi Yang	110,000.00		110,000.00
JHU – Mingyao Ying	110,000.00		110,000.00
JHU – Huimei Yu	110,000.00		110,000.00
UMB – Wen–Chih Cheng	110,000.00		110,000.00
UMB – Ming Jung Kim	110,000.00		110,000.00
UMB – Desiree Krebs–Kraft	110,000.00		110,000.00
UMB – Jaylyn Waddell	110,000.00		110,000.00
<b>Stem Cell Totals</b>	<b>\$18,708,685.00</b>		<b>\$18,708,685.00</b>

HBCU: historically black colleges and universities

JHU: Johns Hopkins University

NASVF: National Association of Seed and Venture Fund

NIH: National Institute of Health

TEDCO: Maryland Technology Development Corporation

UMB: University of Maryland, Baltimore

UMBI: University of Maryland Biotechnology Institute

UMBC: University of Maryland Baltimore County

UMCP: University of Maryland, College Park

(1) Johnson & Johnson shared the cost with the Maryland Technology Development Corporation for these projects, leveraging state dollars for other Maryland Technology Transfer and Commercialization Fund Projects.

(2) Funded 100% by U.S. Department of Defense

(3) Funded 50% by U.S. Department of Commerce, Economic Development Administration

Source: Maryland Technology Development Corporation

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## **2. Outside Funding for Fiscal 2010 Totals \$1.6 Million**

The corporation aims to secure federal and other funds to support its technology transfer and development efforts. **Exhibit 6** shows that, from August 2000 to November 2009, TEDCO had secured \$15.7 million from outside funding sources. Outside funding specifically for fiscal 2010 is \$1.6 million. The cumulative funding represents over a 15 to 1 leverage of TEDCO funds for its programs.

**Exhibit 6**  
**TEDCO Outside Funding Sources**

<u>Program</u>	<u>Amount</u>	<u>Source</u>	<u>TEDCO Match</u>	<u>Fiscal Year Funded</u>	<u>Term of Grant</u>
Technology Showcases for Sustainable Development ♦	\$98,257	SBA	\$0	2010	TBD
Joint Technology Transition Initiative ♦	1,500,000	U.S. Army	0	2010	TBD
NAVAIR Technology Insertion Initiative ♦	800,000	U.S. Navy	0	2009	2 years
Fort Detrick Technology Transfer Enhancement ♦	460,084	DTRA	0	2008	1 year
Maryland Minority R&D Initiative ♦	592,337	SBA	0	2007	2 years
TEDCO/MRASC Initiative ♦	1,000,000	U.S. Army	0	2007	2 years
Fort Detrick Technology Transfer Initiative II ♦	1,500,000	U.S. Army	0	2007	2 years
Fort Detrick Technology Transfer Initiative I ♦	799,697	U.S. Army	0	2005	2 years
Working Capital Loan Fund ♦	325,000	EDA	325,000	2005	2 years
NAVAir Technology Commercialization Initiative ♦	1,311,866	U.S. Navy	0	2005	18 months
Aberdeen Technology Transfer Initiative II	1,100,000	U.S. Army	0	2005	18 months
ACTiVATE (with UMBC)	600,000	NSF	60,000	2005	2 years
Mountain Maryland SBIR Initiative ♦	78,950	SBA	42,720	2005	1 year
Rural Business Incubation Initiative ♦	494,739	SBA	0	2005	18 months
Council of State Governments ♦	99,997	CSG	0	2005	1 year
Aberdeen Technology Transfer Initiative I	965,000	U.S. Army	0	2004	1 year
Maryland Technology Partnership for Innovation	600,000	NSF	60,000	2004	2 years
Council of State Governments ♦	50,000	CSG	0	2004	1 year
eReadiness Study of Western Maryland	50,000	EDA/ARC	25,000	2003	1 year
eReadiness Study of the Eastern Shore	25,000	USDA	15,000	2003	1 year
Maryland Minority SBIR Initiative ♦	225,000	SBA	150,000	2002 and 03	2 years
NAVAir Technology Commercialization Initiative	1,000,000	U.S. Navy	0	2002	2 years
New Markets Growth Fund (Dingman Center – UMCP) ♦♦	500,000	SBA/FHLBAtd	0	2002	3 years
Best Practices in Business Incubation ♦	200,000	EDA	160,000	2002	2 years
American Society of Mechanical Engineers - Fellow ♦	40,000	ASME	0	2002	2 years
Maryland Technology Partnership for Innovation	600,000	NSF	60,000	2001	2 years
Mid-Atlantic Regional Technology Transfer Center ♦	439,000	NASA	0	2001	4 years
eReadiness Maryland ♦	210,000	private/EDA	100,000	2001	2 years
<b>Total Approved August 2000 thru August 2009</b>	<b>\$15,664,927</b>				

- ◆ Funds flow through the Maryland Technology Development Corporation (TEDCO).
- ◆◆ \$166,000 flows through TEDCO.

ASME: American Society of Mechanical Engineers

CSG: Council of State Governments

DTRA: Defense Treat Reduction Agency

EDA: U.S. Department of Commerce – Economic Development Administration

FHLBATL: Federal Home Loan Bank of Atlanta

MRASC: Maryland Research and Applied Sciences Consortium (Consortium of Historically Black Colleges and Universities in Maryland)

NSF: National Science Foundation

SBA: U.S. Small Business Administration

SBIR: Small Business Innovative Research

TEDCO: Maryland Technology Development Corporation

UMBC: University of Maryland Baltimore County

UMCP: University of Maryland, College Park

USDA: U.S. Department of Agriculture

Source: Maryland Technology Development Corporation

***Current and Prior Year Budgets***

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

	<b><u>General</u> <u>Fund</u></b>	<b><u>Special</u> <u>Fund</u></b>	<b><u>Federal</u> <u>Fund</u></b>	<b><u>Reimb.</u> <u>Fund</u></b>	<b><u>Total</u></b>
<b>Fiscal 2009</b>					
Legislative Appropriation	\$23,792	\$0	\$0	\$0	\$23,792
Deficiency Appropriation	0	0	0	0	0
Budget Amendments	0	0	0	0	0
Cost Containment	-1,565	0	0	0	-1,565
Reversions and Cancellations	0	0	0	0	0
<b>Actual Expenditures</b>	<b>\$22,227</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$22,227</b>
<b>Fiscal 2010</b>					
Legislative Appropriation	\$19,068	\$0	\$0	\$0	\$19,068
Cost Containment	-3,325	0	0	0	-3,325
Budget Amendments	0	0	0	0	0
<b>Working Appropriation</b>	<b>\$15,743</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$15,743</b>

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

## **Fiscal 2009**

The original appropriation for TEDCO was reduced by over \$1.5 million due to the cost containment effort. Specifically, the cost containment effort reduced funds for the Maryland Stem Cell Research Fund from \$19.0 million to \$18.0 million. Also, the University Technology Development Fund was reduced by \$200,000, halving the number of recipients for the year. The MTTF relinquished \$225,000, leaving \$1.45 million for the program. Additionally, the University Patent Support Program was eliminated saving \$75,000 and \$30,000 from the business incubation program. Finally, the agency was able to save an additional \$35,000 in reduced printing, web hosting, and equipment costs.

## **Fiscal 2010**

The fiscal 2010 cost containment effort reduced TEDCO's original appropriation by \$3,325,000 in general funds. Of this amount, \$3.0 million was eliminated from the stem cell research program, leaving \$12.4 million for the fiscal year. The incubator support program was reduced by half, leaving \$125,000 for the program. Finally, \$200,000 was reduced from the Maryland Industrial Partnership program. This reduction leaves \$550,000 to provide grants for University of Maryland research based projects designed to help companies develop new products.

**Object/Fund Difference Report  
TEDCO – Maryland Technology Development Corp**

<u>Object/Fund</u>	<u>FY09 Actual</u>	<u>FY10 Working Appropriation</u>	<u>FY11 Allowance</u>	<u>FY10 - FY11 Amount Change</u>	<u>Percent Change</u>
<b>Objects</b>					
01 Salaries and Wages	\$ 0	-\$ 325,000	\$ 0	\$ 325,000	-100.0%
12 Grants, Subsidies, and Contributions	22,227,000	17,018,192	15,858,192	-1,160,000	-6.8%
<b>Total Objects</b>	<b>\$ 22,227,000</b>	<b>\$ 16,693,192</b>	<b>\$ 15,858,192</b>	<b>-\$ 835,000</b>	<b>-5.0%</b>
<b>Funds</b>					
01 General Fund	\$ 22,227,000	\$ 15,743,192	\$ 15,858,192	\$ 115,000	0.7%
07 Nonbudgeted Fund	0	950,000	0	-950,000	-100.0%
<b>Total Funds</b>	<b>\$ 22,227,000</b>	<b>\$ 16,693,192</b>	<b>\$ 15,858,192</b>	<b>-\$ 835,000</b>	<b>-5.0%</b>

Note: The fiscal 2010 appropriation does not include deficiencies.

**Fiscal Summary  
TEDCO – Maryland Technology Development Corp**

<u>Program/Unit</u>	<u>FY09 Actual</u>	<u>FY10 Wrk Approp</u>	<u>FY11 Allowance</u>	<u>Change</u>	<u>FY10 - FY11 % Change</u>
01 Tech. Development, Transfer and Commercialization	\$ 4,227,000	\$ 4,343,192	\$ 3,458,192	-\$ 885,000	-20.4%
03 Maryland Stem Cell Research Fund	18,000,000	12,350,000	12,400,000	50,000	0.4%
<b>Total Expenditures</b>	<b>\$ 22,227,000</b>	<b>\$ 16,693,192</b>	<b>\$ 15,858,192</b>	<b>-\$ 835,000</b>	<b>-5.0%</b>
General Fund	\$ 22,227,000	\$ 15,743,192	\$ 15,858,192	\$ 115,000	0.7%
Nonbudgeted Fund	0	950,000	0	-950,000	-100.0%
<b>Total Appropriations</b>	<b>\$ 22,227,000</b>	<b>\$ 16,693,192</b>	<b>\$ 15,858,192</b>	<b>-\$ 835,000</b>	<b>-5.0%</b>

Note: The fiscal 2010 appropriation does not include deficiencies.