Maryland TEDCO
Technology-Development-Corporation
www.marylandtedco.org

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September 30, 2005

The Honorable Robert L. Ehrlich, Jr.
Governor, State of Maryland
100 State House
Annapolis, Maryland 21401

Gary Murray, Chair
Maryland Economic Development Commission
217 East Redwood Street, 23rd Floor
Baltimore, Maryland 21202

The Honorable Michael E. Busch
Speaker of the House of Delegates
Maryland General Assembly
State House, H-101
Annapolis, Maryland 21401

The Honorable Thomas V. Miller, Jr.
President of the Senate
Maryland General Assembly
State House, H-107
Annapolis, Maryland 21401

Gentlemen:

Pursuant to Article 83A, Section 5.2A-06 of the Annotated Code of Maryland, I am pleased to submit on behalf of the Board of Directors of the Maryland Technology Development Corporation (TEDCO), the 2005 Annual Report of the Corporation's activities. The accompanying financial statements, approved by the Board at its Annual Meeting on September 8, 2005, received an unqualified ("clean") audit from an independent public accountant, BDO Seidman.

At the Annual Meeting of the Board, the Directors elected the following Directors to serve as Officers of the Corporation in 2005/2006:

Frank Adams, President and CEO of Grotech Capital Group, Chair
Ted Poehler, Vice Provost for Research at Johns Hopkins University, Vice Chair
William Snyder, retired executive with Crown Petroleum, Treasurer
Eugene DeLoatch, Dean of the Engineering Department at Morgan State University, Secretary

TEDCO was established by the Maryland General Assembly in 1998 to create and sustain businesses throughout all regions of the State through the transfer and commercialization of technology from research organizations and by the private sector; in 2001 TEDCO was further authorized to promote entrepreneurship and job creation by establishing and operating business incubator facilities and programs.

Since the inception of operations in FY2001, TEDCO has established nationally recognized initiatives that provide innovative seed funding for technology transfer, access to federal laboratory technologies and resources, and support for business incubation and entrepreneurial development. These activities are conducted in close coordination with the Department of Business and Economic Development.

In July 2004 and again in July 2005, *Entrepreneur Magazine* ranked TEDCO <u>#1</u> nationally for the largest number of investments in start-up/seed or early stage companies. The results of TEDCO's seed stage funding strategy are substantial: the 39 MTTF companies that have finished their funded projects, with a total <u>TEDCO investment of $2,188,544, have collectively raised $60,700,000</u> in downstream funding from a mixture of venture and angel investors, government Small Business Innovation Research (SBIR) and Advanced Technology Program (ATP) research grants, private placements, and product sales, a 27:1 leverage of the State's investments.

TEDCO's programs have been noted by the Governor's Commission on the Development of Advanced Technology Business ("Pappas Commission"), which specifically endorsed increased funding for TEDCO's seed and pre-seed technology development programs, support of the State's incubator network with capital and operating funds for best practices, and the encouragement of entrepreneurial initiatives and technology transfer with universities.

TEDCO's programs have also been recognized by federal agencies; in FY2005 TEDCO was awarded federal funding for 8 grants totaling over $3.5 million directly through TEDCO, and with accountability for another $2.7 million. TEDCO's success in acquiring federal funds for programs in Maryland was documented in the FY2004-FY2006 Annual Report of the Governor's Grants Office, which ranked TEDCO first among all State agencies in the percentage increase in number of grant programs (an 800% increase from FY2004 to FY2005), second in the percentage increase in grant dollars (100%), and among the top ten State agencies in the total increase in number of grant programs and federal grant dollars.

Due to TEDCO's success in obtaining federal funding for Maryland, the Department of Business and Economic Development (DBED) has requested that TEDCO assist it in identifying and seeking federal funds to support DBED priority goals and objectives.

In addition, the Governor's Office of Homeland Security has asked TEDCO to serve as the managing agent of the newly created "All Hazards Consortium" (AHC). The AHC is an educational forum and clearinghouse for State and local government officials, educational institutions, businesses and first responders to share information, ideas, strategies, and planning concepts in the field of homeland security and other hazards. TEDCO will assist the AHC Board of Directors in developing policies, providing administrative support, establishing a web presence, meeting with potential technology vendors, and promoting the October 2005 All Hazards Forum at the Baltimore Convention Center.

The Board greatly appreciates the support the Administration and General Assembly have provided TEDCO to carry out its mission, and we trust that we have fulfilled the responsibility that you have entrusted to the Directors and Management.

Sincerely,

Phillip Singerman

Phillip A. Singerman, Ph.D
Executive Director

cc: TEDCO Board of Directors

2005 Annual Report

September 30, 2005

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Maryland Technology Development Corporation (TEDCO)
2005 Annual Report
Table of Contents

Maryland Technology Development Corporation (TEDCO) 2005 Report

I. Introduction

The Maryland Technology Development Corporation (TEDCO) was created by the Maryland General Assembly in 1998 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; (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" and "to promote entrepreneurship and the creation of jobs in technology-related industry by establishing and operating effective incubators throughout the State that provide adequate physical space designed, and programs intended, to increase or accelerate business success in the field of technology."

In FY2000 the initial TEDCO Board of Directors was appointed, received a seed grant of $642,000 from the Maryland Department of Business and Economic Development, and hired as its first employee, an Executive Director, to build the organization. Operational activities began in FY2001; at the beginning of FY2006 the organization has 14 technically trained professionals, and overall responsibility for state programmatic and capital budgets and federal funds exceeding $10 million.

TEDCO has developed nationally recognized programs that facilitate the technology development, transfer, and commercialization process. Among its singular accomplishments are the development of linkages with the numerous federal research facilities in Maryland; the attraction of over $8 million in federal grants from 13 different federal agencies such as the National Science Foundation, NASA, Economic Development Administration, the U.S. Navy, the U.S. Army and the Small Business Administration; and the creation of innovative seed funding programs to fill gaps in the technology transfer process. TEDCO has focused attention on the information technology needs of under-served regions of the State; and developed the State's first comprehensive business incubation program.

In FY2005 TEDCO was awarded federal funding for 8 grants totaling over $3.5 million directly through TEDCO, and with accountability for another $2.7 million. TEDCO's success in acquiring federal funds for programs in Maryland was documented in the FY2004-FY2006 Annual Report of the Governor's Grants Office, which ranked TEDCO first among all State agencies in the percentage increase in number of grant program (an 800% increase from FY2004 to FY2005), second in the percentage increase in grant dollars (100%), and among the top ten State agencies in the total increase in number of grant programs and federal grant dollars.

The following projects illustrate the use of these federal funds:

- The Aberdeen Technology Transfer Initiative is a $965,000 program, designed to support small business development in collaboration with Aberdeen Proving Ground (APG). Funded by the Maryland Congressional delegation, and in cooperation with APG's Business Development Office, by the summer of 2005, 12 companies had received

$50,000 seed grants to develop technologies of importance to the U.S. Army. In light of the enormous response to this program, and the increased importance of APG as a technology generator, TEDCO and its local partners have sought additional federal funding.

- The Rural Business Incubation Initiative (RBI), a $495,000 Congressional program funded through the U.S. Small Business Administration, is intended to support incubation stage companies in rural southern Maryland and the Eastern Shore. TEDCO is collaborating with the College of Southern Maryland's (CSM) Corporate and Community Training Institute and the University of Maryland Eastern Shore's (UMES) Rural Development Center. Twenty-four companies received assistance in the first nine months of the program.

Due to TEDCO's success in obtaining federal funding for Maryland, the Department of Business and Economic Development (DBED) has contracted with TEDCO to identify and seek federal funds to support DBED priority goals and objectives.

TEDCO's Incubator Development Fund continues to stimulate successful new facilities. In FY2005 three new facilities opened: the Silver Spring Innovation Center, the Prince George's County Technology Assistance Center, and the Frederick Innovation Technology Center, with a total square footage of 45,000. In addition, a new facility – the proposed 26,000 sq. ft. Rockville Innovation Technology Center – received a $1,000,000 commitment from TEDCO's Board of Directors.

Since August 2000, TEDCO has organized 30 technology showcases linking entrepreneurs, investors and researchers with the resources of federal research facilities in the State. In July, 2005, over 350 individuals attended a showcase on Biomedical Technologies in collaboration with the U.S. Army Medical Research and Materiel Command at Fort Detrick.

At the request of the Governor's Office of Homeland Security, and with federal funding through the Maryland Emergency Management Agency (MEMA), TEDCO will serve as the managing agent of the newly created All Hazards Consortium, assisting the Board of Directors, providing a web presence, promoting the All Hazards Forum, and meeting with vendors of interest to the State.

The All Hazards Consortium will serve as an educational forum and clearinghouse for State and local government officials, educational institutions, businesses and first responders to share information, ideas, strategies, and planning concepts in the field of homeland security and other hazards. This activity stems from the very successful All Hazards Forum held in December 2004 and scheduled for October 26-28, 2005 at the Baltimore Convention Center.

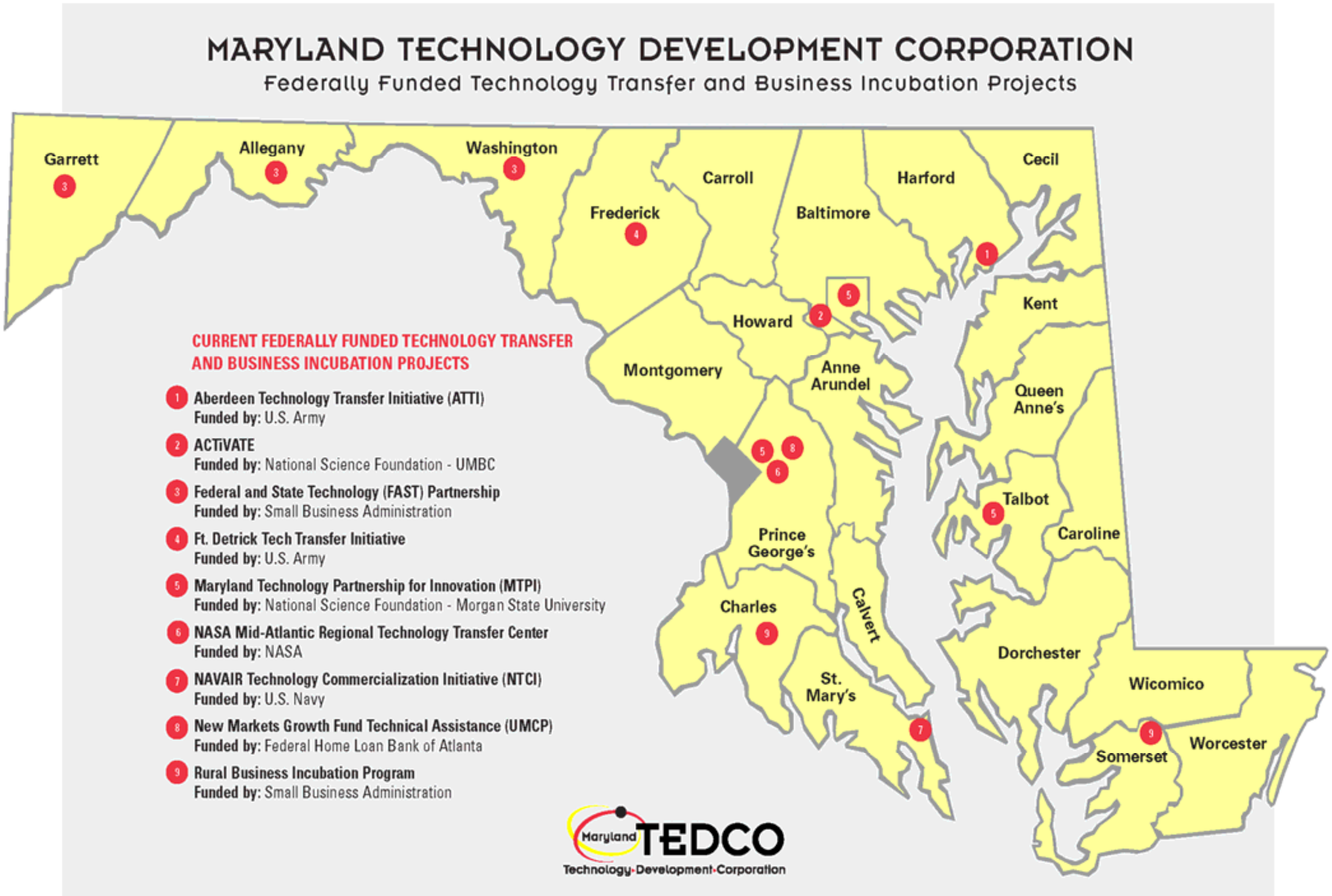
In July 2004 and again in July 2005, *Entrepreneur Magazine* ranked TEDCO #1 nationally for the largest number of investments in start-up/seed or early stage companies for the second consecutive year. The results of TEDCO's seed stage funding strategy are substantial: the 39 MTTF companies that have finished their funded projects, with a total TEDCO investment of $2,188,544, have collectively raised $60,700,000 in downstream funding from a mixture of venture and angel investors, government Small Business Innovation Research (SBIR) and Advanced Technology

Program (ATP) research grants, private placements, and product sales, a 27:1 leverage of the State's investments.

In FY2005, the Board of Directors, after reviewing its strategic plan, approved a new role for TEDCO to be Maryland's leading source of funding for seed capital and entrepreneurial business assistance for technology transfer and development programs. This new role for TEDCO reflects the strategic direction suggested by the Pappas Commission, which in its September 2004 Update, proposed that TEDCO focus more attention on promoting entrepreneurship.

In furtherance of this goal, in FY2005 the Board of Directors approved the preparation of an application to the U.S. Department of Treasury for an allocation of "New Markets Tax Credits," which provide incentives for private sector investments in distressed areas. TEDCO's $25 million application, submitted in September, 2005, is focused on university affiliated research parks and business accelerators and second stage investments in emerging technology companies. If awarded, this funding vehicle could leverage the State investments by as much as 4:1.

The following annual report to the Administration and General Assembly outlines TEDCO's programs.



February 2005

II. Board of Directors

The Corporation, a "body politic and corporate and constituted as a public instrumentality of the State," is governed by a 15 member Board, appointed by the Governor with the approval of the Senate. TEDCO Board members represent the nonprofit research sector (2 representatives), venture capital financing (2), experience in technology-based businesses (5), the general public (3), colleges or universities (2), and the Secretary of Business and Economic Development. All are leaders in their sectors and represent major geographic regions of the State.

During FY2005, the Board met on the following dates, generally for three hours.

July 15, 2004
September 9, 2004 (annual meeting)
November 18, 2004
January 27 2005
March 10, 2005
May 12, 2005

At the September 8, 2005 Annual Meeting of the Board of Directors, the Nominations and Board Policy Committee recommended and the Directors elected Frank Adams as Chair, Ted Poehler, PhD, as Vice Chair, Eugene DeLoatch, PhD, as Secretary, and William Snyder as Treasurer. Following is a list of the Directors of the Corporation (as of September 30, 2005):

TEDCO Chair
Frank A. Adams
President & CEO
Grotech Capital Group

TEDCO Vice Chair
Theodore O. Poehler, Ph.D
Vice Provost for Research
Johns Hopkins University

TEDCO Treasurer
William R. Snyder

TEDCO Secretary
Eugene M. DeLoatch, Ph.D
Dean, School of Engineering
Morgan State University

Gregory V. Billups
President & CEO
Systems, Maintenance & Technology, Inc.

Hon. Beverly B. Byron
Byron Butcher Associates

John F. Cahill, Esq.
Counsel
Carter, Ledyard & Milburn, LLP

Monty L. Deel
President
GST Protocol Services, Inc.

William W. Destler, Ph.D
Provost and Senior Vice President
University of Maryland College Park

Aaron H. Kazi
Managing Partner
The Canton Group

Richard C. (Mike) Lewin

Aris Melissaratos
Secretary, Department of Business & Economic Development

Robert Russell
President
Delmarva Online

Steve Walker
President
Steve Walker Associates, Inc.

Anthony C. Wisniewski, Esq.
Director of State Policy
MedImmune, Inc.

The Governor’s Commission on the Development of Advanced Technology Business (“Pappas Commission”) was created “to develop and submit to the Governor specific recommendations for the further growth of Maryland’s technology economy.” The Commission’s Report, issued in January 2004, contained several recommendations specifically endorsing TEDCO’s activities, including increased funding for TEDCO seed and pre-seed technology development programs, support of the State’s incubator network with capital and operating funds for best practices, and the encouragement of entrepreneurial initiatives and technology transfer with universities.

In July 2004, the Board of Directors initiated a Strategic Planning process, reviewing lessons learned to identify strengths, weaknesses, and opportunities, and began to prepare a 3-year strategic plan. In September, the Board determined that TEDCO has learned what it takes to turn Maryland’s research resources into economically productive business: concentrating its efforts on the robust tech development sector, focusing on seed stage activities, and leveraging existing resources.

A new role for TEDCO is emerging: to build upon its strengths as an effective technology transfer and development organization to become the State’s leading source of seed capital and commercialization assistance for technology related industry. This new role for TEDCO reflects the strategic direction suggested by the Pappas Commission, which in its September 2004 Update, proposed that TEDCO focus more attention on promoting entrepreneurship.

III. Management and Administration

Personnel and Operations

As FY2006 begins, TEDCO has ten full-time state funded positions and four federally funded part- and full-time position, who collectively hold eleven master degrees, three doctorates, and over 200 years of experience in technology and economic development. Staff expertise includes technology transfer, biotechnology, military and federal laboratory commercialization, information technology, entrepreneurial development, minority business assistance, association management, and public administration:

- Henry Ahn, *Program Manager, Technology Funding Programs*
- Timoth Copney, *Office Administrator*
- Daria Fenderson, *Administrative Assistant* (September 2005)*
- Steve Fritz, Ph.D, *Director, Technology Transfer*
- Linda P. Herring, *Program Manager, Mountain Maryland SBIR Initiative**
- David M. Houle, *Program Manager, E-Commerce***
- Lee Kirwan, *Technical Assistance Specialist, Rural Business Incubation**
- Ronald W. Kaese, *Senior Program Manager, Federal Laboratories*
- Roberta L. Melton*, Program Manager, Entrepreneurial Development*
- David Minges, *Program Manager, Aberdeen Technology Transfer Initiative**
- Linda Saffer, Ph.D, *Program Manager, University Programs*
- Heidi Sheppard, *Program Manager, Incubator Programs*
- Phillip A. Singerman, Ph.D, *Executive Director*
- Renée M. Winsky, *Deputy Executive Director*

* Federally funded position.
** Replaced by Dawn Bohn, *Program Manager, Contracts and Grants* (September 2005).

TEDCO has not created a top heavy internal administrative infrastructure, instead it utilizes cost effective outside professional firms to provide specialized administrative services. Consequently, TEDCO's FY2005 G&A expenses were 5.6% of total operating expenses, down from 6.3% in FY2004. In 2005, TEDCO continued its cost-conscious approach to management, reducing its rent to the prior year level and freezing it for three years, and reducing the cost of its medical benefits.

Administaff, Inc., a Professional Employer Organization, manages TEDCO's human resources functions, including payroll services and the provision of health benefits. Through this arrangement TEDCO is provided with a full range of professional human resources services at a low cost to the organization. Other specialized professional service providers include:

- BDO Seidman, *Audit Firm*
- The Canton Group, *Website Development Services*
- Maryland Attorney General's Office, *Legal Counsel*
- Rubino & McGeehin, *Professional Accounting Firm*
- Towson University RESI, *Website Hosting Services*

TEDCO is identified as DBED's specialized technology transfer entity, and the two organizations collaborate on a wide variety of activities. TEDCO's Executive Director attends DBED's senior management meetings, TEDCO's Director of Tech Transfer regularly attends DBED's Business Development Team meetings, and DBED's Deputy Secretary serves as TEDCO's primary liaison with the Administration.

Advisory Committees

Policy recommendations and program oversight are provided by Technology Advisory Committees, which are comprised of experts representing the private sector, educational and research institutions, and federal agencies. The Technology Transfer Technical Advisory Committee now includes:

- Gregory Billups, Systems, Maintenance & Technology, *Co-Chair*
- Theodore Poehler, PhD, Johns Hopkins University, *Co-Chair*
- Stephen Auvil, Graduate School, University of Maryland, Baltimore County
- Jack Cahill, Esq., Carter, Ledyard & Milburn, LLP
- Robert Charles, Walter Reed Army Institute of Research, Fort Detrick
- Nariman Favardin, School of Engineering, University of Maryland, College Park
- Ron Hawkins, Technology Extension Service Northeast Office
- J. Mike Hayes, Maryland Department of Business and Economic Development
- Robert Kavetsky, Naval Surface Warfare Center, Indian Head
- C. Warren Mullins, Battelle Memorial Institute
- James E. Lewis , School of Engineering, Morgan State University
- Michael Reischman, National Science Foundation
- Don Spero, Dingman Center for Entrepreneurship, University of Maryland
- Steve Walker, Steve Walker Associates
- John C. Weiss III, University of Maryland Baltimore

The Committee met on August 12, 2004, December 9, 2004, and April 14, 2005.

The Technical Advisory Committee on Small Business Incubation includes:

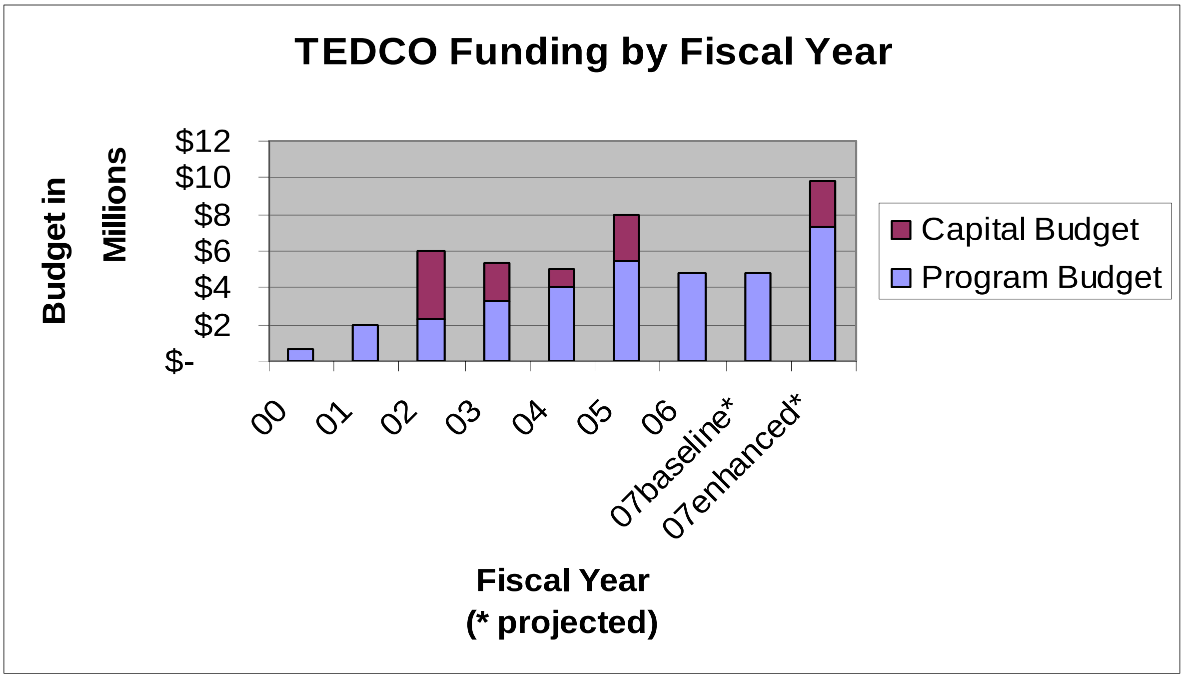
- Monty Deel, GST Protocol Services, Inc., *Chair*
- Robert Brennan, Maryland Economic Development Corporation
- David W. Edgerley, Montgomery County Department of Economic Development
- Jason Groves, Verizon
- James Henry, Maryland Department of Business and Economic Development
- Patricia Larabee, Facility Logix
- Brian Merritt, American Express Tax and Business Services
- Hans Meyer, formerly with Maryland Economic Development Corporation
- Neal E. Noyes, U.S. Department of Commerce, Economic Development Admnistration
- Eric Orlinsky, Saul Ewing, LLC
- Robert Russell, Delmarva Online

The Committee met on November 4, 2004 and February 10, 2005.

IV. Financial History

In FY2004, TEDCO became a direct grantee from the State's General Fund Budget. TEDCO's appropriation included $4 million in operations and $1 million in capital funding. As a result of this grant relationship with the State, TEDCO and the Department of Budget and Management held a series of meetings in order to evaluate available data and identify quantifiable metrics for TEDCO's programs. The goals and metrics that were developed form the basis of TEDCO's budgeting and strategic planning process moving forward.

The following chart illustrates TEDCO's State funding history. Each year, TEDCO's Board of Directors evaluates and approves the State budget request. For FY2007, the Directors have approved two budget requests: a "baseline" budget of $4,811,000, frozen at the FY2006 level, and an "enhanced" budget request of $9,811,000, intended to put Maryland on a competitive level with peer States.



TEDCO has developed detailed policies and procedures to ensure that all funds are properly controlled, and financial statements are regularly reviewed by TEDCO's Finance and Audit Committee. TEDCO has retained the services of Rubino & McGeehin as its accounting advisor and the services of BDO Seidman to serve as independent auditor.

In September 2005 BDO Seidman met with the Finance and Audit Committee to present the FY2005 audited financial statements. For the sixth consecutive year TEDCO's financial statements received an unqualified ("clean") opinion, and for the third consecutive year there were no management recommendations from the auditors.

V. Innovative Seed Funding for Technology Transfer and Development

University Patent Support Program

After discussions with the university technology managers during FY2003, TEDCO committed $1,500,000 over three years for a program designed to increase the number of first patent applications on university technology. Governor Ehrlich formally announced the new program in October 2003. This program is at the national forefront for State efforts to support university generated intellectual property.

In FY2005, TEDCO allocated funds according to a performance based formula among six university campuses to support new patent applications and later stage exemplary patents, including Johns Hopkins University; Johns Hopkins University-Applied Physics Lab; University of Maryland Baltimore; University of Maryland Baltimore County; University of Maryland Biotechnology Institute; and University of Maryland College Park. As of September 30, 2005 the universities had been reimbursed for 114 new patent applications and 4 foreign national stage application for a platform technology.

University Technology Development Fund (UTDF)

The University Technology Development Fund provides initial awards up to $50,000 to support development of university-owned intellectual property to make it more valuable to a licensee. It is explicitly intended to be used by university technology licensing offices to enhance the value of their portfolio. Development work is done by university inventors. It differs from the Maryland Industrial Partnerships program (MIPS) – which provides a subsidy for companies in Maryland that wish to access the expertise of University System faculty and students – by (1) working with all public and private educational institutions in the State, (2) focusing solely on the development of technology, and (3) providing development funding to universities prior to identification of a technology collaboration partner to make technologies more attractive to licensees. Participating universities include, Johns Hopkins University; Johns Hopkins University-Applied Physics Lab; Morgan State University; University of Maryland Baltimore; University of Maryland Baltimore County; University of Maryland Biotechnology Institute; University of Maryland College Park; and Uniformed Services University Health Systems.

The following table lists the summary statistics for the University Technology Development Fund during FY2005**.**

Category	Number of Proposals	Total Funds Requested
Total Received	18	$889,122
Approved for initial funding	11	$519,122

The objective of the UTDF program is to provide funds for pre-commercial development of university technologies to enhance the likelihood that they would be licensed. These projects are the earliest stages in the technology development process, and often take several years to realize any commercial outcomes. Of the total of 62 projects funded during the history of this program, 13 have been licensed, 10 to Maryland companies. UTDF projects have resulted in 13 startup companies, and 5 of these have gone on to receive Maryland Technology Transfer Fund (MTTF) awards to initiate commercialization.

Even in the early stages of technology development – university conducted R&D – TEDCO's awards have shown promising results. Of 42 completed projects, 14 have already resulted in license agreements with companies, and in a direct contribution to the Maryland economy, 10 of those companies are in-State, and 13 have led to start-up companies. Even greater impacts are expected as these technologies are presented to the private sector.

An example of a UTDF technology is an award made in FY2004 to the University of Maryland Baltimore. Dr. Fasano's technology, a portfolio of over twenty related patents, has been licensed to Alba Therapeutics, a Baltimore-based biopharmaceutical company located at the Emerging Technology Center in Canton. Alba won an MTTF award and then support from the DBED Challenge program. Recently, Alba Therapeutics closed on a $30 million series A Round of financing. Alba is commercializing disease-modifying therapeutics and drug delivery adjuvants based on the zonulin pathway. Alba's lead molecule, AT-1001, is targeted towards the treatment of Celiac Disease and Type 1 Diabetes.

Maryland Technology Transfer Fund (MTTF)

The Maryland Technology Transfer Fund provides initial non-equity investments of up to $75,000 per company to defray the costs of initial transfer of technology from or co-development of technology with universities and federal laboratories in Maryland. It differs from the DBED Challenge and Enterprise programs in three ways: (1) MTTF is conceptually located at an earlier stage than DBED's Challenge program, and serves as a "farm team" for this later stage fund; (2) MTTF is appropriate for technology development projects that are economically viable but do not have the scope for a venture capital investment; and (3) MTTF only invests in companies partnering with federal laboratories or universities, thereby capitalizing on the prior federal and university research investments and infrastructure.

Partnering federal laboratories and universities include, Aberdeen Proving Ground; Ft. Detrick; Hood College; Johns Hopkins University; Johns Hopkins University-Applied Physics Lab; Morgan State University; National Geospatial Intelligence Agency; National Institute of Standards and Technology; National Institutes of Health; National Naval Medical Center; National Security Agency; Naval Air Warfare Center – Patuxent River; Naval Surface Warfare Center – Indian Head; Navy Research Laboratory; University of Maryland, Baltimore; University of Maryland Baltimore County; and University of Maryland, College Park.

The following table lists the summary statistics for the Maryland Technology Transfer Fund during FY2005.

Category	**Number of Proposals**	**Funds Requested**
Total Received	31	$1,994,837
Approved for initial funding	21	$1,419,837
Approved for continuation funding	2	$ 75,000

The objective of the MTTF program is to seed the initiation of new technology transfer projects that will go on to become self-sustaining, i.e., be able to raise funding from non-State sources to continue their projects to a successful commercialization. The 39 MTTF companies that have finished their funded projects, with a total TEDCO investment of $2,188,544 million, have collectively raised $60,681,228 million in downstream funding from a mixture of venture and angel investors, government Small Business Innovation Research (SBIR) and Advanced Technology Program (ATP) research grants, private placements, and product sales.

- An example of an MTTF-funded company is Advanced Vision Therapies, Inc. (AVT), a company currently located in the Maryland Technology Development Center incubator in Rockville, Maryland. AVT has licensed intellectual property from Novartis, Inc. and has developed state-of-the-art technology for the sustained delivery of therapeutic proteins to the retina.

  In collaboration with Johns Hopkins University AVT is developing this technology for the treatment of currently under-served diseases that cause blindness, with the goal of restoring vision and ensuring the long-term preservation of sight. AT has raised a total of $2.9 million including five Small Business Innovation Research (SBIR) awards from the National Eye Institute.

- Another example is Innovative Biosensors, a company currently located in the TAP incubator at the University of Maryland College Park. Innovative Biosensors has developed the BioFlash™ system, a genetically engineered biosensor that allows for extremely rapid testing of analytes at previously unseen levels of sensitivity and specificity.

  Innovative Biosensors was initially funded by TEDCO and subsequently won support from the Maryland Industrial Partnerships (MIPS) program and the DBED Challenge program. In 2005 Innovative Biosensors closed on a $3,000,000 series A venture investment led by the New Markets Growth Fund (NMGF) with participation by the DBED Enterprise program.

MTTF awards have payback requirements in the event of company revenue. Despite the early stage of these investments, 11 have repaid their funding in full or in part and one has converted its payback obligation to equity in a venture capital investment round.

Performance Assessment

The Department of Budget and Management established performance targets for outcomes that TEDCO will deliver in FY2005-FY2007 based on investments made in FY2005. These targets include R&D project progress against the milestones and plans set out in the company/university proposals for funding. In FY 2005 TEDCO engaged RTI International, a nationally recognized technology transfer consulting firm based in Research Triangle Park, North Carolina, to conduct an independent assessment of <u>commercialization progress</u> on 40 completed projects, 20 MTTF projects and 20 UTDF projects. The results of this assessment confirmed that the TEDCO's methods for determining progress toward commercialization are valid and that the assessments of TEDCO in general agreed with those of RTI. The final report was submitted in October 2004.

In FY2005 TEDCO again engaged RTI to analyze the economic impact of MTTF awards and UTDF licenses for the calendar year 2004. RTI used a sophisticated, widely accepted input-output model to calculate these impacts: the results show that for a total TEDCO investment of $2,268,000, the state of Maryland saw a total economic impact in that year of $24,974,134, 11 times the State's original investment, and created 267.4 jobs, at a calculated cost of $8,500, an extremely cost effective return.

New Markets Growth Fund (NMGF)

TEDCO had received a 3-year $250,000 grant from the Federal Home Loan Bank of Atlanta (FHLBA) in support of the center's New Markets Growth Fund (NMGF) at the University of Maryland, College Park. The NMGF, which will make $20 million in venture capital available to small businesses in economically distressed regions in Maryland, Virginia, and the District of Columbia, is part of the New Markets Venture Capital program administered by the U.S. Small Business Administration.

The FHLBA grant provides technical assistance to start-up companies that receive venture capital from the NMGF and provides for technical assistance to technology entrepreneurs who have potential for investments. A focus will be placed on companies transferring technology from universities in the City of Baltimore and Prince George's County, particularly on those companies working with HBCUs. TEDCO works with the Dingman Center to evaluate the need for technical assistance and in selected cases provide the technical assistance. In FY2005 the grant allowed the NMGF to provide technical assistance to six companies. Four of the companies have received equity funding from the NMGF and the other two are under consideration. Examples of the types of assistance the companies have received are product development, market analysis, product positioning, identifying strategic partners and executive management analysis and recruitment.

Cigarette Restitution Fund

Pursuant to legislation passed by the General Assembly in 2000, the State of Maryland provided grants for cancer research to the University of Maryland Medical Group (UMMG) and Johns Hopkins University School of Medicine (JHMI) from the Cigarette Restitution Fund. The emphasis was on developing new diagnostics and therapies for cancer and moving them expeditiously to the clinic. The Maryland Department of Health and Mental Hygiene, the Department of Business and Economic Development, and TEDCO were directed to enter into Memoranda of Understanding with the two universities on intellectual property and technology commercialization. TEDCO has taken the lead in developing the State's approach.

During the past year the three state agencies have met with UMB and JHU researchers and administrators to review progress made with the CRFP grants and to remain current on technology transfer activities. During the period ending in FY05 JHU has reported 6 invention disclosures associated with the Cigarette Restitution Fund. One of the invention disclosures has been licensed and one had a market study done by TEDCO. Five patent applications were filed on these technologies. UMB has not reported any invention disclosures during this time period. Both UMMG and JHMI met with the advisory committee twice during FY2004, most recently on May12 with JHMI and on May 24 with UMMG.

Toucan Capital

In the fall of 2000, the TEDCO Board of Directors, after a rigorous and transparent competitive review process, recommended that Toucan Capital II receive an investment in their new SBIC fund. After review and its own due diligence, the Department of Business and Economic Development committed $4 million to invest in the fund as a Limited Partner.

During the initial stages of the fund's development, TEDCO introduced Toucan to Maryland companies that might be of interest to the fund. Toucan has now essentially completed its initial funding, reserving most of its remaining funding for follow-on investments in its existing portfolio; accordingly, TEDCO has ceased presenting opportunities to Toucan, and DBED, as the official limited partner, has assumed full responsibility for monitoring the fund.

VI. Federal Laboratory Technology Insertion and Commercialization Programs

Federal Lab Partnership Agreements

Maryland is uniquely suited to serve as an intermediary between businesses and the technology, resources and knowledge available in the nation's federal laboratories because of their concentration in Maryland – more than 50 major facilities – including NIH, NIST, NASA-Goddard, Naval Surface/Naval Air Warfare Centers, and the Army Research Lab. Annually these labs conduct over $10 billion of intramural research, twice as much as in any other State. TEDCO sponsors technology showcases at the federal laboratories to help the labs showcase their available intellectual property, ongoing research activities, and technology needs to potential licensees and/or collaborators. These technology showcases provide the Maryland business community with a clear understanding of the technology collaboration opportunities available at federal labs in the state.

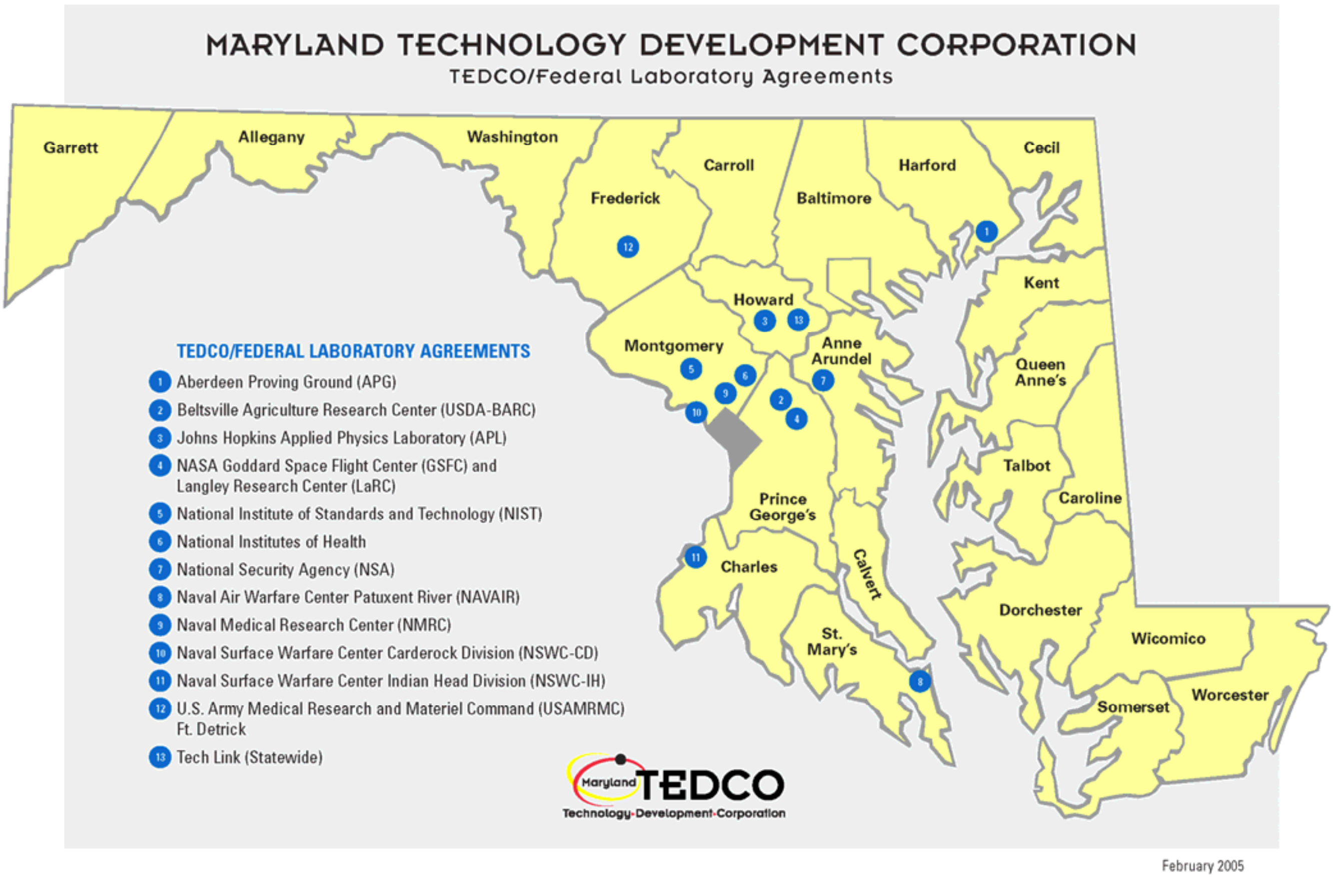
To date, TEDCO has signed a Memorandum of Understanding or other agreement with each of the following facilities:

- Aberdeen Proving Grounds Science & Technology Board, Aberdeen, MD
  Includes Army Research Center, Adelphi, MD
- Johns Hopkins University-Applied Physics Laboratory, Laurel, MD
- NASA Mid-Atlantic Technology Transfer Center
  Prime Contractor: Technology Commercialization Center, Langley, VA
- National Institute of Standards and Technology, Gaithersburg, MD
- National Security Agency, Ft. Meade, MD
- Naval Air Warfare Center Aircraft Division, NAS Patuxent River, MD
- Naval Medical Research Center, Bethesda, MD
- Naval Surface Warfare Center, Carderock Division, Carderock, MD (inactive)
- Naval Surface Warfare Center, Indian Head Division, Indian Head, MD
- US Army Medical Research and Materiel Command, Fort Detrick, MD
- USDA Beltsville Agricultural Research Center, Beltsville, MD
- National Institutes of Health, Bethesda, MD

Other major federal laboratories also fall under the purview of these agreements such as the Army Research Lab (ARL) in Adelphi, MD; the Walter Reed Army Institute of Research, to be relocated to Bethesda, MD; and NASA Langley Research Center (LaRC), Langley Virginia (through the Mid-Atlantic Regional Technology Transfer Center).

A Memorandum of Understanding was signed in January 2005 between TEDCO and the National Institutes of Health (NIH) in Bethesda. NIH is within the U.S. Department of Public Health. Its mission is science in pursuit of fundamental knowledge about the nature and behavior of living systems and the application of that knowledge to extend healthy life and reduce the burdens of illness and disability. NIH is the nation's medical research agency.

A Partnership Intermediary Agreement was signed in June 2004 between TEDCO and the U.S. Army Medical Research and Materiel Command (USAMRMC) at Fort Detrick. A contract was signed in March 2005 for TEDCO to manage the Fort Detrick Technology Transfer Initiative for the USAMRMC. The USAMRMC is the Army's medical materiel developer and logistician and operates six medical research laboratories and institutes, including the U.S. Army Medical Research Institute of Infectious Diseases, the U.S. Army Medical Research Institute of Chemical Defense and the Walter Reed Army Institute of Research all of which are Command's with Maryland-based facilities.



Federal Lab Technology Showcases

From August 2000 through June 2005, TEDCO organized 30 technology showcases attracting over 3,800 entrepreneurs, investors, scientists, and economic development professionals. In FY2005, TEDCO sponsored five events; the Technology Council of Maryland and Greater Baltimore Technology Council provided administrative support to these programs.

National Institutes of Health, "Innovations in Drug Discovery, Delivery, and Diagnostics," October 7, 2004, 250 attendees

> NIH headquarters, known as "NIH Campus" to the local community, are located in Bethesda, Maryland. Administrative and program operations facilities are also located in office campus buildings in the surrounding area. NIH scientists conduct their research in laboratories located on the main campus, and in several field units across the country and abroad.

Aberdeen Proving Ground, "Personal Protective Technologies," March 8, 2005, 159 attendees

> Because APG is a very diverse installation with over 60 tenant organizations and nearly 20 of them performing research and/or development activities a second showcase was held. This showcase featured presentations from Aberdeen Testing Center (ATC), Medical Research Institute of Chemical Defense (MRICD), Army Research Laboratory (ARL), Center for Health Promotion and Preventive Medicine (CHPPM), Edgewood Chemical and Biological Center (ECBC) and National Center for Excellence for First Responder Technologies (NCEFRT). Major theme for the technologies presented were personal protective technologies for chemical and biological defense of interest to first responders.

National Institute of Standards and Technology (NIST), "Opening Doors to the National Institute of Standards and Technology (NIST)," June 9, 2005, 248 attendees

> NIST has an operating budget of about $858 million and operates in two locations: Gaithersburg, Md., (headquarters—234-hectare/578-acre campus) andBoulder, Colo., (84-hectare/208-acre campus). NIST employs about 3,000 scientists, engineers, technicians, and support and administrative personnel. About 1,800 NIST associates complement the staff. In addition, NIST partners with 1,400 manufacturing specialists and staff at affiliated centers around the country.

U.S. Army Medical Research and Materiel Command, Fort Detrick, "Creating Superior Boimedical Technologies," July 14, 2004, 350 attendees (anticipated)

> The U.S. Army Medical Research and Materiel Command (USAMRMC) is a major subordinate command of the U.S. Army Medical Command, with headquarters at Fort Detrick in Frederick, Maryland. The Commander of the USAMRMC is the Assistant Surgeon General for Research and Development. The command conducts research and development (R&D) activities at military

research facilities and through hundreds of contracts and Cooperative Research and Development Agreements (CRDAs) with universities, other institutions, and industry. The research programs address unique military medical problems to preserve the health and safety of soldiers.

NAVSEA, "Federal Marketplace Series," Joint Tech Council of Maryland and TEDCO event, April 21, 2004, 100 attendees

The Federal Marketplace Series presents details on federal procurement opportunities, combining specific programs into joint events. These combined events facilitate interaction among federal laboratories, large businesses and small companies.

Federal Laboratory Partnership Program (FLPP)

The Federal Laboratory Partnership Program (FLPP) provides a subsidy of up to $20,000 for companies that collaborate in a formal agreement with a federal lab with which TEDCO has an established partnership. The program provided funding conceptually similar to the Maryland Industrial Partnerships program (MIPS) for collaborations with University System of Maryland institutions but is restricted to collaborations between companies and the federal government. Projects have been funded under the program involving collaborations with 6 federal labs Aberdeen Proving Ground; Johns Hopkins University Applied Physics Lab; Beltsville Agricultural Research Center; Naval Surface Warfare Center – Carderock; NASA Langley Research Center, and Naval Surface Warfare Center – Indian Head.

The following table lists the summary statistics for the Federal Laboratory Partnership Program through March 31, 2005.

Category	Number of Proposals	Total Funds Requested
Total Received	28	$530,795.20
Approved for funding	**22**	**$411,500.20**

The Last FLPP award was made in February 2005. Subsequent to this award it was decided that the benefits of the FLPP Program could be achieved under the Maryland Technology Transfer Fund (MTTF) Program with the additional benefit of providing funds for the company to pursue its own development. Consequently the FLPP Program was merged with the MTTF Program in March 2005.

NAVAIR Technology Commercialization Initiative (NTCI)

The original NAVAIR Technology Commercialization Initiative was a collaboration of TEDCO and The Patuxent Partnership to commercialize technology from the Naval Air Warfare Center Aircraft Division (NAWCAD) at NAS Patuxent River. The program ran from 2002 through 2004.

In August 2004 Senators Mikulski and Sarbanes and Representative Hoyer announced that the U.S. government had appropriated $1,500,000 to continue the NAVAIR Technology

Commercialization Initiative (NTCI). TEDCO's partner in this endeavor is the Pax Partnership. TEDCO received the NAVAIR contract and a sub-contract from TEDCO to the Pax Partnership was signed September 2004.

The NTCI is unique in that it offers a Phase-I project of up to $75,000 to demonstrate an innovative technology and a Phase-II of up to $75,000 to get that technology adapted for a NAVAIR specific application. To date, $600,000 has been awarded to eight companies for their Phase-I grants. All of the approved projects are in collaboration with NAVAIR experts and are developing technologies to meet NAVAIR needs (Spin-In). The following table lists the summary statistics for the NTCI through September 30, 2005:

Company	Company City	State	Maryland County	Collaborating Lab	Proposal Title	Amount Funded
System Excelerator, Inc.	Crofton	MD	Anne Arundel County	NAWCAD Helicopter Transmission Test Facility	Develop and demonstrate a wireless real time intelligent monitor/manager that will provide real time operational system integrity information in Avionics and industrial equipment applications.	$ 74,850
P.C. Krause & Assoc., Inc.	Dayton	OH		NAVAIR Power Systems	Variable Distributed Heterogeneous Simulation exchange rate for a large scale system environment demonstrated on a NAVAIR system	$ 75,000
Falcon SEC	Crofton	MD	Anne Arundel County	NAWC AD	flashing emitters for marking friendly force combat assets and landing zones for use in thermal IFF application to prevent blue-on-blue / fratricide	$ 75,000
CryptpLex	California	MD	St. Mary's County	NAVAIR Security	Multi-level high security biometric authentication system	$ 75,000
Direct Dimensions, Inc.	Owings Mills	MD	Baltimore County	Crew Systems	Rapid 3D Image Acquisition and Reusable Model Management by Leveraging Laser Scanning and Data Fusion Technologies	$ 75,000
Nano Solutions, Inc.	Tall Timbers	MD	St. Mary's County	NAVAIR Power Systems	Novel electrical energy storage device with advanced features. Goal is to exceed all current battery types.	$ 75,000
Sensics	Baltimore	MD	Baltimore City	Crew Systems	Fully Immersive Display for Crew Station Design & Evaluation	$ 74,900
Triton Systems, Inc.	Savage	MD	Howard County	Army Research Institute of Chemical Defense	Longer lasting abrasion resistant coating for laser eye protection	$ 75,000
						$ 599,750

Aberdeen Technology Transfer Initiative (ATTI)

In May 2004 Senators Mikulski and Sarbanes and Representative Ruppersberger announced that the U. S. government had appropriated $1,000,000 to create the Aberdeen Technology Transfer Initiative (ATTI) patterned after the successful NAVAIR Technology Commercialization Initiative. TEDCO's partner in this endeavor is the Aberdeen Proving Ground Science & Technology (APG S&T) Board's Business Development Office (BDO).

Seed grants will be provided to businesses identified to work with Aberdeen Proving Ground collaborators with an emphasis on technologies to meet Army needs (Spin-In).

As of September 30, 2005, this first year of ATTI awards has been completed, resulting in 12 awards to businesses totaling $646,789. The following table lists the summary statistics for the ATTI through September 30, 2005:

Company	Company City	State	Maryland County	Collaborating Lab	Proposal Title	Amount Funded
Phoenix S&T	Elkton	MD	Cecil County	Edgewood Chemical Biological Center	Commercialization of a Personal Automated Nanospray System for Mass Spectrometry Applications in Drug Discovery and Clinical Diagnostics	$ 50,000
BSCO, Inc.	Forest Hill	MD	Harford County	Aberdeen Test Center	HFC-125 Fire Suppression System Testing	$ 55,984
QuickSilver Analytics	Abingdon	MD	Harford County	Edgewood Chemical Biological Center	Funding for Design Modifications and Permanent Injection Mold for the BiSKit Large Area Biological Sampling Kit	$ 50,000
Spiralcat Innovations	Elkton	MD	Cecil County	Army Test Center and CHPPM	Field Sanitation Unit (FSU): Water to Energy Converter Providing Power & Potable Flush Water for Containerized Latrines	$ 57,394
Epitaxial Technologies	Catonsville	MD	Baltimore County	Army Research Laboratory	Develop Growth Technologies for Thallium-Based Compound Semiconductors	$ 50,000
Prime Circuits	Potomac	MD	Montgomery County	Army Research Laboratory	X-Ray Detectors for Non Destructive Evaluation (NDE) of Munitions and Armaments	$ 55,624
CCL Biomedical, Inc.	Havre de Grace	MD	Harford County	Edgewood Chemical Biological Center	Antimicrobial Fabrics for Soldier and Health Care Worker Protection	$ 54,855
Chesapeake PERL	Savage	MD	Howard County	Army Research Institute of Chemical Defense	Expression of Recombinant Human Butylcholinesterase in the C-PERL PERLXpress System	$ 55,000
Rubicon Laboratory	Baltimore	MD	Baltimore County	Edgewood Chemical Biological Center	Novel Technology for Detection of Biothreat Agents	$ 50,000
axonX	Baltimore	MD	Baltimore City	Aberdeen Test Center	Video-Based Fire Detection Systems (*Signifire*)	$ 50,000
KBI BioPharma	Durham	NC		Edgewood Chemical Biological Center	Centrifugal BioReactor (CBR) Technology	$ 61,932
20/20 Gene Systems	Rockville	MD	Montgomery County	Edgewood Chemical Biological Center	Development of an Assay for Biomarkers for Chemical Exposure in Hair Follicles	$ 56,000
						$ 646,789

Fort Detrick Technology Transfer Initiative (FDTTI)

The Ft. Detrick Technology Transfer Initiative, in collaboration with the Frederick County Office of Economic Development (OED), was designed to allow TEDCO to find and provide seed funding to companies developing cutting-edge technologies that matched Army defined technology needs. In July 2004, Senators Mikulski and Sarbanes and Representative Bartlett announced that the Ft. Detrick project was appropriated $1,000,000 in the FY2005 Defense Appropriations Bill. The Fort Detrick Technology Transfer Initiative was started in March 2005. Two awards have been approved and awarded. Three more are in the final stages of review and issue resolution. Through the end of June a total of 14 proposals or whitepapers have been submitted. This is a very popular program with significant potential benefit to the U.S. Army.

Company	Company City	State	Maryland County	Collaborating Lab	Proposal Title	Amount Funded
Biaera Technologies, LLC	Frederick	MD	Frederick County	US Army Medical Research Institute of Infectious Diseases	computer-controlled aerosol system that automates and standardizes the equipment and procedures for inhalation and/or aerosol-related exposures commonly performed in biomedical research	$ 50,000
Sterilex Corporation **Note: Awarded September 2005**	Owings Mills	MD	Baltimore County	US Army Medical Research Institute of Infectious Diseases	develop novel antimicrobial products for use against resistant strains of *Staphylococcus aureus* and *Escherichia coli*, based on combinations of safe components and representing multiple modes of action	$ 50,000
						$ 100,000

NASA Regional Technology Transfer Center (RTTC)

As part of TEDCO's partnership with the NASA Mid-Atlantic Regional Technology Transfer Center (RTTC), TEDCO has done extensive outreach to Maryland companies to connect them with technology commercialization opportunities from NASA. TEDCO participated in several major events in support of NASA objective including, four TEDCO Technology Showcases, Mid-Atlantic Venture Association (MAVA) annual meeting (June 2004), Defense Medical & Procurement Conference (June 2004), Funding Post VC Fair (October 2004), National Business Incubator Association meeting (May 2005), and Morgan State Technology Transfer Symposium (May 2005). TEDCO also provided staff support to three events at the request of the NASA Mid-Atlantic RTTC: Sensors.Gov conference (September 2004), NASA Tech Briefs Nano 2004 Conference and Expo (November 2004), the Langley Industry Day (January 2005).

At NASA-Goddard's request TEDCO continues to support the effort by Goddard to educate their researchers on the commercialization process and benefits. This involved three planning meetings in support of Goddard's VC Boot Camp series.

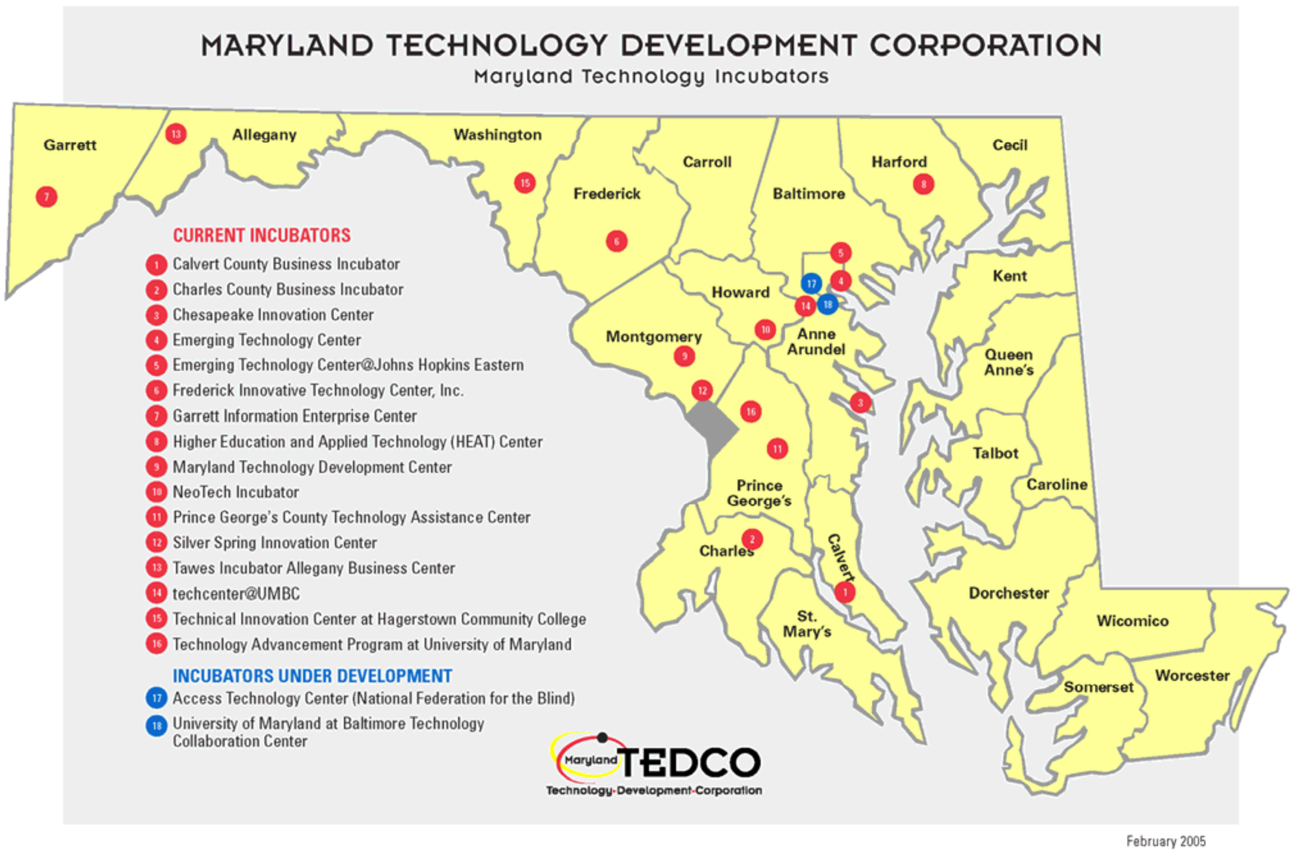
Since July 2004 TEDCO has offered NASA 12 technology *spin-in* prospects and 14 patent licensing prospects. One company is actively in negotiations for a Patent License Agreement for four technologies, three at Goddard and one at Langley. Funding has also been provided to enable collaboration between NASA Goddard and Mobitrum, Corp. and BCG Wireless.

Special actions include continued of the Mid-Atlantic Institute for Space & Technology (MIST) Board of Directors and Working Group. TEDCO procured and shared with the rest of the RTTC the Mid-Atlantic Technology Directory. Finally, a dozen TEDCO relationships with possible benefit to NASA were provided for NASA consideration and use.

VII. Business Incubation and Entrepreneurial Development

Incubator Development Fund

This program is designed to support the development of new technology-oriented incubators around the state. From FY2002 through FY2005 the State appropriated a total of $9.25 million in PAYGO and General Obligation Bond funds. (In FY2004, $250,000 was reprogrammed for a University of Maryland Biotechnology Institute (UMBI) Maryland/Israel project.)



To date five projects have been funded at $3.43 million, leveraging over $9.4 million, and two other facilities have each received a $1 million commitment.

<u>Emerging Technology Center@Johns Hopkins Eastern ($1,000,000)</u>
This facility houses information technology companies and is located in the distressed area of Baltimore. The building is an old high school that has been renovated as office space. Four bottom floors are currently being used by Johns Hopkins University administration and the top floor (45,000 square feet) has been renovated to be used as a technology business incubator. This is part of a $6.7 million project, including over $1 million in EDA funds. Currently, the incubator is 44% occupied.

techcenter@umbc ($775,000)
The techcenter@umbc renovated Building B, which is located behind their current incubator facility. It added approximately 19,200 square feet to their current facility and increased their wet lab space by 9,000 square feet. Currently, the incubator is 95% occupied.

Silver Spring Innovation Center ($1,000,000)
This 19,900 square foot facility has been open since September 2004. It is located at East West Highway and Blair Mill Road in Silver Spring's Enterprise Zone. This is part of a $3.3 million project and it houses information technology companies. It is already 95% occupied.

Frederick Innovative Technology Center ($425,000)
The Frederick Innovative Technology Center, Inc. (FITCI), A 10,000 sq. ft. facility, is located in the Rosenstock Hall Building at Hood College. It is designed to support the development of information technology and bioscience entrepreneurs in Frederick County. It is the first phase of a County-wide incubator initiative, and is currently 57% occupied. A second, longer term phase of the County's incubator initiative is in the planning stages and would likely be a purpose-built facility located at Fort Detrick in Frederick. The project is also receiving $425,000 from DBED and $100,000 per year for 5 years from Frederick County.

Prince George's County Technology Assistance Center ($230,000)
The Prince George's County Technology Assistance Center relocated from their facility in Lanham to Largo, where they added an additional 2,000 square feet to their incubator for a total of 15,000 square feet. The new facility now houses the Prince George's Economic Development Corporation (EDC), the Maryland Department of Business and Economic Development regional office, the SBDC, and FSC (Financial Services Corporation). The EDC matched the award with $230,000. Thirteen companies, with an average employment of 4.5 FTE's, are located in the facility.

Commitments
University of Maryland, Baltimore ($1,000,000)
The TEDCO Board approved a commitment of $1,000,000 to The University of Maryland, Baltimore for building an incubator facility as part of their new Research Park.

Rockville Innovation Technology Center ($1,000,000)
TEDCO's Board of Directors approved a commitment of $1M to the Maryland Economic Development Corporation (MEDCO) to support the development of the Rockville Innovation Technology Center (RITC). The RITC will be located on the fourth and fifth floors of the planned Cultural Arts Building, which will be built adjacent to the new library located in the Town Square of Rockville's downtown redevelopment project. The City of Rockville is expected to fund the shell of the building. TEDCO will finance the fit out expenses for this 26,000 square foot facility, which will house 12 to 18 companies. The incubator will target bioinformatics companies and international

companies looking to establish a U.S. presence. The building is expected to be completed by January 2007.

techcenter@umbc ($225,000)
TEDCO's Board of Directors approved a commitment of $225,000 to the techcenter@umbc to complete renovations to Building B, including the replacing outdated HVAC systems, upgrading the water purification systems, compressed air and generator for back up power serving the areas previously upgraded. Additional chemical fume hoods and laboratory benches will be installed per requests from current and prospective companies. Eighteen companies at the techcenter have utilized the previously renovated space, have expanded since into a total of 28,000 square feet and have hired an additional 108 employees.

East Baltimore Development, Inc. and the East County Center for Science and Technology are expected to submit proposals for funding of $1,000,000 each in FY2006 for incubators in Baltimore City and Montgomery County respectively. By the end of FY2006, it is expected that this fund will have $1.345M remaining.

TEDCO is working with other communities and organizations that have expressed serious interest in further development of incubator facilities; the University of Maryland College Park, the Chesapeake Innovation Center (Annapolis), Johns Hopkins Shady Grove Campus, Howard County and the Eastern Shore.

Facility Feasibility Studies

In order to identify appropriate opportunities for the creation of new incubator facilities, in 2001 TEDCO initiated a formal program to sponsor independent, professional studies of the feasibility of potential incubator projects. Each study was sponsored by a local government, university, or non-profit corporation, and provided at least 1:1 cash match. Fifteen studies have been commissioned to date. TEDCO investments of $320,500 were matched by $430,677.

In FY2005, TEDCO granted $17,000 (with a $17,000 match) to the Chesapeake Innovation Center to prepare a Strategic Plan for Sustainability of their incubator. The plan will be executed in two phases. Phase I will develop a set of written recommendations for a plan with short-term and long-term objectives. It will address: A model for sustainability, organizational structure, management structure and staffing, financing strategy (including sources of funds), potential facility options, incubation best practices in sustainability. The Chesapeake Innovation Center has chosen Business Cluster Development as the consultant on this project. Business Cluster Development has been a consultant and adviser to the CIC for the past three years and was an integral part of developing the incubator in 2002, providing the management during their launch and start-up phases.

Facility Logix was hired by the Johns Hopkins University Montgomery County Center to prepare a Market Analysis and User Requirement Study for a Life Science Accelerator Facility at their Shady Grove Campus. TEDCO provided $5,000 of funding and JHU, Spalding & Slye and Montgomery County provided a total of $15,000.

TEDCO recently committed $25,000 to the Howard County Economic Development Authority to examine the potential for building a new and larger facility to house the Neotech Incubator and the Business Resource Center.

Federally Funded Pilot Program: Technology-Led Development through Business Incubation

In FY2004 TEDCO received and implemented a $200,000 grant from the U.S. Economic Development Administration (EDA) to provide additional support for technology business incubators throughout Maryland. TEDCO and DBED matched the grant with $200,000 in state funds. The 18 month, $400,000 project supported the expansion of best practices of incubators. The grant used funds for an entrepreneurship training program, technology and market assessments, intensive business assistance, a monthly newsletter for the Maryland Business Incubation Association, and access to capital sources through sponsorships of events.

In FY2005, TEDCO built upon the success of the U.S. EDA's grant as a model and continued the successful program with $400,000 from TEDCO's program budget to provide grants to 14 existing incubators, pursuant to a performance-based formula developed in conjunction with the Maryland Business Incubation Association. To date, this funding has provided assistance to over 100 companies located in 12 incubators. In addition, this funding is being accessed by the incubator managers to hire outside consultants to work with specific companies on projects that will help them grow their businesses. To date, 6 incubators have applied to use these funds for 17 companies.

Working Capital Loan Fund

As a follow-on to this successful program, TEDCO submitted a proposal for $325,000 to the Economic Development Administration (EDA) for the creation of a Working Capital Loan Fund for Incubation Stage Companies. TEDCO was awarded the funding and is matching that amount with $325,000; creating a $500,000 revolving loan fund will provide small working capital loans of $15,000 to $50,000 to incubator stage companies located in EDA eligible areas. ($50,000 was used to sponsor the NBIA Conference (see below) and the remaining $100,000 will be used to manage the Fund for two-years.) Eligible counties are in Western MD, along the Eastern Shore and Baltimore City. The Loan Committee consists of representatives from the Tri-County Council of Western Maryland, the Mid-Shore Regional Council, the Lower Shore Regional Council, Maryland Department of Business and Economic Development, the Baltimore Development Corporation and the Rural Maryland Council. The loans will be serviced by HarVest Bank of Maryland.

Maryland Business Incubation Association (MBIA)

The MBIA, supported by TEDCO, hosted the 2005 International Conference of the National Business Incubation Association in the City of Baltimore in May 2005. Over 625 attendees participated in the conference. TEDCO participated in two panels, "The Maryland Model," which described the initiatives that the State has undertaken to support incubator development and “Evaluating State Incubator Programs” in coordination with Catherine Renault, Research Triangle International.

Maryland Intellectual Property Legal Resource Center

In FY2005, TEDCO provided $15,000 in funding to the Maryland Intellectual Property Legal Resource Center to open a second location in Baltimore City. The Maryland Intellectual Property Legal Resource Center is a venture that provides low or no cost services to high tech companies in the state to train law students in intellectual property law. The primary customers for the center are companies located in the technology incubators throughout the state. The Center began providing services to the Maryland Technology Development Center and has since expanded to a location in Baltimore City at the Emerging Technology Center. Additional funding for this program has been received from the Emerging Technology Center ($10,000) and committed from the University of Maryland ($50,000).

Mid-Shore Regional Council

The Mid-Shore Regional Council promotes the interests and goals of Caroline, Dorchester and Talbot Counties in order to enhance the well-being of the area. The Council obtained EDA funding to support a program that increases the access to capital for companies in those areas. One aspect of the two year program consists of developing a near equity fund. TEDCO has provided $20,000 to the Council as partial match for the EDA grant of $60,000 that they received. DBED, the USDA and each county contributed funding for a total of $295,000 for the program.

2005 Maryland Incubator Company of the Year

The Maryland Incubator Company of the Year Award is intended to connect companies to private investors. Initiated by TEDCO in 2001 with co-sponsorship by Saul Ewing, LLC and American Express Tax and Business Services, and supported by MBIA, this first in the nation state award program recognizes incubator tenants and graduates that have excelled.

A unique aspect of the program is the selection committee, comprised of representatives from private venture and public investment programs, which reviews all applications and determines the winners, thus enabling the incubator companies exposure to the investment community.

In its fifth year, the Incubator Company of the Year award ceremony was held on May 16, 2005 in conjunction with the National Business Incubation Association annual conference at the Renaissance Harborplace Hotel in Baltimore. There were approximately 150 attendees to the event. Thirty-one companies submitted applications, 18 finalists were chosen, and 6 winners were given awards. John Holaday, former CEO of EntreMed and Chairman of HarVest Bank, was the M.C. for the event this year. The *Baltimore Business Journal* produced a supplement containing articles on the winners which was distributed at the event and through their normal distribution channels. ICYA winners and members of the selection committee attended an Orioles game in the Governor’s Box in appreciation for their efforts.

The 2005 winners were:

New Incubator Company – AVICode, Inc. (techcenter@UMBC, Baltimore) Detects and reports application faults in interconnected systems by providing products that monitor application servers, isolate problems and tell operations managers where to find the trouble spots.

Life Science – Innovative Biosensors, Inc. (Technology Advancement Program, College Park) Develops rapid pathogen detection technologies with the world's fastest, most sensitive tests to detect infectious diseases.

Information Technology – TechGuard, LLC (techcenter@UMBC, Baltimore) Develops hardware, software and consulting solutions for Internet security and privacy.

Technology Service – Radius Technology Group, Inc. (Silver Spring Innovation Center, Silver Spring) Provides information assurance and security solutions to help manage and protect data investments.

Technology Transfer – Sensics, Inc. (Emerging Technology Center, Baltimore) Develops high-end displays and camera systems for virtual reality and telerobotics.

Graduate – Tetracore, Inc. (Maryland Technology Development Center, Rockville) Develops diagnostics for infectious diseases and bio-terrorism threat agents.

Maryland Technology Partnership for Innovation (MTPI)

The Maryland Technology Partnership for Innovation is a federally funded collaborative effort to connect businesses in distressed areas of the state with the resources resident in federal laboratories. Announced in October 2000, this project is funded by the National Science Foundation's (NSF) highly competitive Partnerships for Innovation program; it was one of 24 projects nationwide and the only one funded in Maryland the first year of the program. TEDCO's cash match of $60,000 yielded $600,000 in federal funds, a 10 times return.

MTPI Partners:

- Morgan State University (lead institution)
- TEDCO
- Prince George's County Economic Development Corporation
- Emerging Technology Center in the City of Baltimore
- Chesapeake Bay Region Technical Center of Excellence
- University of Baltimore Center for Technology Commercialization

In September 2003 the MTPI received a new three-year, $600,000 award from NSF, representing a 10 times return on TEDCO's new cash match of $60,000. MTPI now works with the technology incubators and business schools in Maryland – including the Dingman Center at College Park, Morgan State University EDAC, University of Baltimore and BEACON at Salisbury University – to provide customized business and technical assistance to companies;

support new product creation; assist companies in attracting private capital; and create collaboration strategies between businesses and federal laboratories.

Eleven companies have been supported through FY2005. The companies have a broad range of technologies including educational software, defense, agro-technology, sensors, medical devices, marine technology, homeland security, satellite imagery, and optics. Seven of the companies are minority owned businesses. On the average companies employ five full time staff and have revenue less than $1 million.

ACTiVATE Program: Achieving the Commercialization of Technology in Ventures through Applied Training for Entrepreneurs

The ACTiVATE Program at the University of Maryland Baltimore County is funded by the National Science Foundation's Partnership For Innovation Program. An award of $600,000 was announced in summer 2004; TEDCO provided the local cash match of $60,000, yielding a 10 times return for the State.

The primary goal of the ACTiVATE Program is to create a systematic model for increasing the commercialization of technology innovations from universities by training entrepreneurs to create technology-based, start-up companies. The model will be validated by introducing 90 mid-career women to the basics of entrepreneurship and by commercializing university technologies through the creation of 6 to 9 new companies during the programs first three years. UMBC will be the lead institution for the ACTiVATE Program through interdepartmental partnerships involving its Office of Technology Development, Center for Women and Information Technology, Alex. Brown Center for Entrepreneurship, and techcenter@UMBC.

The ACTiVATE Program will also involve key partnerships with state development agencies, including TEDCO, which has established a specialized capability for the evaluation of technologies. The program began in January 2005 with 30 students participating. Of the 9 entrepreneurial teams formed, four have identified technologies that they anticipate commercializing once they have graduated from the program.

Rural Business Incubation Initiative

The Rural Business Incubation Initiative (RBI) is a new program that began in September 2004. It is a multi-year project funded by a U.S. Small Business Administration grant of $494,739. TEDCO is partnering with the College of Southern Maryland's (CSM) Corporate and Community Training Institute (formerly the Economic and Community Development Institute), and the University of Maryland Eastern Shore's (UMES) Rural Development Center.

The purpose of the project is to enhance the technology commercialization activities in frequently overlooked regions of the State. The program works with incubator and incubation type companies to provide technical and business assistance at no cost and to encourage technology commercialization activities between the private sector and federal laboratories and higher education institutions. Companies can receive individual business assistance as well as help in identifying critical technology available in universities and federal laboratories important to their business. The program also assists entrepreneurs looking for technology commercialization opportunities. The partners work with local economic development officials in identifying and assessing the needs of current incubators as well as future incubators. Twenty-four companies received assistance in the first nine months of the program.

Mountain Maryland Small Business Innovation Research (SBIR) Initiative

During FY2004, TEDCO prepared and submitted an application to the Small Business Administration's Federal and State Partnership (FAST) Program for the Mountain Maryland SBIR Initiative. In FY2005, the project was awarded $79,920 from the Small Business Administration and matched with $41,750 in cash from TEDCO and $46,000 in in-kind support from project partners that include: Garrett (College) Information Enterprise Center (GIEC), the Tawes Hall at Frostburg State University (FSU), and the Hagerstown (Community College) Technical Innovation Center. (TIC)

The Mountain Maryland SBIR Initiative provides assistance to perspective SBIR/STTR bidders with one-on-one counseling, workshops on the SBIR application process/strategies, and pre-submission draft proposal reviews by SBIR experts.

In February, seventy-one individuals attended three kick-off briefing sessions in Hagerstown, Frostburg, and McHenry. In March, twenty three people attended full-day workshops on "How to Win SBIR Funding" in Hagerstown and McHenry. Since the sessions were held, ten companies began working on SBIR proposals and are taking advantage of the special resources being offered through the grant. To date, four companies have submitted six SBIR applications to five different agencies (NIH, DOD, NASA, NSF, and USDA). In each case, this was the first time each company had applied for an SBIR. At lease one applicant company is from each of the three counties. Additionally, three other companies are planning to apply in the next SBIR solicitation period with another three companies considering submission in the near future.

VIII. Program Development and Outreach

Broadband Assistance and Planning

TEDCO supports technology entrepreneurship and the diversification of local economies, and sees affordable access to high-speed communications as a critical component in fulfilling its mission. TEDCO continues to work closely with rural regional councils to develop comprehensive, market-based solutions that improve broadband resources and usage amongst underserved businesses and consumers in Maryland. In FY2005, TEDCO provided planning grants to the Mid-Shore Regional Council and the Tri-County Council for Southern Maryland for a Broadband study and will continue to provide technical assistance, and seek federal funding sources when applicable in 2006.

In Southern Maryland, the Tri-County Council continues to work with CCG Consultants, based in Riverdale, MD, to determine if there is a viable need to develop a new entity that would close gaps in currently available broadband services to local businesses in the region. TEDCO is supporting this effort both financially and with technical assistance (as is DBED). A progress meeting was held in April. A meeting was held on July 7 to discuss a final draft of the report.

TEDCO continues to serve on, and provide staffing to, the Task Force on Broadband Communications Deployment in Underserved Rural Areas. In the 2005 Maryland Legislative Session SB 454 was introduced and passed to extend the life of the Task Force through the end of the 2006 calendar year. The Task Force released a progress report in August and will meet on September 21. The agenda includes regional and statewide project updates.

In June, TEDCO representatives sponsored and facilitated a panel at the 2005 MEDA Annual Conference in Rocky Gap on telecommunications. Speakers included Ellis Kitchen, State CIT, Sean Looney with Comcast, and Frank Shap with Garrett County Office of Economic Development. The panel discussed statewide networks, rural projects, and public and private sector initiatives. The session drew over 100 attendees, including four State Cabinet Secretaries.

TEDCO Website

TEDCO continues to promote and update website content as a critical outreach tool to promote its funding opportunities and other business assistance programs. A wide variety of subject matter across all of TEDCO’s programs continues to drive online activity with incubator activities, funding programs and technology benchmarking studies taking the lead.

As of this writing, TEDCO is in the process of upgrading its website to accommodate additional functionality and capacity. In addition to federal lab technologies with potential for transfer to the commercial marketplace being featured on the site, other features will include the ability to search TEDCO’s portfolio of funded projects and the Maryland winners of Small Business Innovative Research (SBIR) awards for the past five years, and will host the web presence of the All Hazards Consortium.