



A Proposal to Create a ND TEDCO (Technology Development Corporation)



Adding a tool to the Economic
Development Toolkit



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MARCH 2010

A New Paradigm for Economic Development

How Higher Education
Institutions Are Working to
Revitalize Their Regional and
State Economies

March 2010

By David F. Shaffer and David J. Wright

HIGHLIGHTS

In states across America, higher education institutions and systems are working to become key drivers of economic development and community revitalization. They are:

- Putting their research power to work by developing new ideas that will strengthen the country's competitive edge in the new economy — and then by helping to deploy those innovations into commercial use.
- Providing a wide range of knowledge-focused services to businesses and other employers, including customized job-training programs, hands-on counseling, technical help, and management assistance.
- Embracing a role in the cultural, social, and educational revitalization of their home communities.
- And, most fundamentally, educating people to succeed in the innovation age.

Together, these trends suggest a new paradigm for economic development programs — one that puts higher education at the center of states' efforts to succeed in the knowledge economy.

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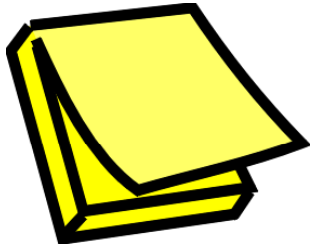
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“Research is the transformation of money into knowledge. Innovation is the transfer of knowledge into money”

--Dr. Geoffrey Nicholson, Inventor of the Post-It™ Note



How do we make this happen?



The Problem

There is often a gap between research done by university scientists and the translation of that research into the form of a product that can be manufactured and sold commercially.

Typically, it is not the case that either the university researchers or the private sector have both the necessary scientific expertise *and* a knowledge of real-world production and financial constraints.



A Possible Part of the Solution



A Possible Part of the Solution--

Create a technology development agency modeled after Maryland TEDCO (Technology Development Corp)

TEDCO... Bringing Innovation to Maryland.

Maryland tops the nation in research and development spending and is improving in commercializing research and development breakthroughs. *Entrepreneur Magazine* ranked TEDCO #1 nationally for the largest number of investments in start-up/seed or early stage companies for the **fifth consecutive year!** TEDCO is bringing innovations from universities and federal labs into the State's economy by facilitating the transfer of technology to the private sector and by providing emerging technology companies and university researchers with vital seed funding and specialized technical assistance. Watch this site for updates.

Does It Work?

- In testimony before the state legislature in 2009, MDTEDCO reported **leverage of \$38 of other funding for every \$1 of TEDCO funds invested.**



- There were 119 completed projects in ten years (involving both universities and Federal research labs), and another 150 companies in the current portfolio.
- In eight years, the university-focused activities (grants of \$50K) resulted in **32 licensed technologies** and **19 start-up companies** being started in MD.

Proposal

Create the North Dakota Technology Development Corporation, modeled after the highly successful Maryland TEDCO.

(See www.MarylandTEDCO.org)



TEDCO's Mission: To facilitate the creation of businesses and foster their growth in all regions of the State through the commercialization of technology

TEDCO's Role: To be North Dakota's leading source of funding for technology transfer and development programs and entrepreneurial assistance.

How Does TEDCO Work in Maryland?



One-year grants of \$50-75,000 fund **joint research by the university and the private sector partner.** The university must have a work plan, commercialization plan and IP analysis, milestones and budget. Funds may support salaries and benefits, supplies, equipment, overhead, and patent costs (capped at \$5K in MD). The university shares with TEDCO any revenues generated from the commercialization until it has paid back twice the amount of the grant.

What Kinds of Things Does TEDCO Do in Maryland?

- **Technology showcases** (matchmaking events to link researchers and companies or investors)
- Constantly seeking to identify both projects with commercial potential and companies and investors who might be interested



What Kinds of Things Does TEDCO Do in Maryland?

Funds **joint** research by the university investigator and the partner company to **bridge the gap** between basic research and commercial products.

Usually \$50K, with significant progress expected in 12 months



What Kinds of Things Does TEDCO Do in Maryland?

TechStart Program (TSP): Provides up to \$15,000 to evaluate the feasibility of a technology to be the basis of a startup company. The feasibility team must include the principal investigator, entrepreneur, and tech transfer manager. Funds are to be used for tasks critical to determining the viability of a new company formed around the spin-out technology.



What Kinds of Things Does TEDCO Do in Maryland?

- Holds workshops on how to get SBIR grants
- Provides a **Working Capital Loan Fund**-- loans to early stage technology-oriented companies located in the state of Maryland. Loans of between \$15,000 and \$50,000 are available to be used for working capital in order to assist a company with expansion, market entry, or other initiatives.



What Kinds of Things Does TEDCO Do in Maryland?

- Provides **assistance to rural business**
 - Technology commercialization strategy
 - Intellectual property strategy
 - Market channels
 - Financing options
 - Building a management team
 - Organizational structure
 - Human resource issues
 - New market opportunities
 - SBIR and STTR proposal writing assistance



What Kinds of Things Does TEDCO Do in Maryland?

Provides **assistance to rural business**

- Providing technical assistance in:
 - Prototype design
 - Manufacturing Assistance
 - Energy Assessments
- Identifying funding opportunities
- Identifying companies seeking technologies to commercialize and facilitate collaborations with federal laboratories and universities



What Kinds of Things Does TEDCO Do in Maryland?

Funding Briefings: TEDCO hosts briefings to teach companies how to use TEDCO's funding programs to help develop, transfer and commercialize technology from Maryland universities and federal laboratories to the Maryland marketplace.



What Does It Cost?

- Total state funding in MD has ranged from \$3-8M/year.
- Universities share with TEDCO any revenues generated from commercialization until the institution has paid back twice the amount of the grant.
- Note that MD has many universities and a plethora of Federal labs that MD TEDCO works with. A lower level of funding would be needed in ND.



A LOOK
at the
BUDGET

A TEDCO Success Story

- New company formed and taking orders for radio-controlled UAVs to provide ag data within 18 months after making contact with BARC

**AeroView International is based on
BARC research with unmanned vehicles**



- Imaging with infrared and visible light used to provide info on crop disease, soil moisture, fertilizer needs, runoff
- AeroView charges \$1-\$1.50/acre vs. \$1.50-\$2/acre for manned aircraft

A TEDCO Success Story

Intralytix, Inc., Baltimore, collaborated with BARC researchers on using bacteriophages as sprays on fresh-cut fruits and vegetables to prevent growth of food-borne human pathogens.

Intralytix got EPA and FDA approval for ListShield™ in 2008 to decontaminate food processing establishments against *Listeria*.

It just received its 3rd Army STTR contract to work on *Shigella*; previous ones were for *Salmonella* and *E. coli*.





The screenshot shows the Choice Batter website. At the top, there's a navigation bar with links: Home, Product Info, Recipes, Frequent Fryer Program, Resources, Company Info, and Order Choice Batter. The main header features the Choice Batter logo and the tagline "The Healthier Option for GREAT TASTING Gluten-Free Frying." Below this, a banner highlights the product's benefits: "LOW OIL-ABSORBING RECIPE GLUTEN-FREE", "Great Crispy Taste", "Absorbs Up to 50% Less Oil", "Gluten-Free", and "Kosher". A central section titled "Welcome to ChoiceBatter" explains the product's origin and health benefits, mentioning a USDA-patented recipe and its safety for those with gluten intolerance. To the left, a product image shows a box of Choice Batter with the text "The healthier option for GREAT TASTING Gluten-Free frying". To the right, a video player shows the product being used. Below the main text, there are sections for "ChoiceBatter Fans Say..." (featuring a testimonial from Julie of Chicago, IL), "Featured Recipe" (Fried Apple Rings or Pear Slices), and "ChoiceBatter News" (More Frying, Less Fat with New Cooking Batter). The website also includes a "BUY NOW!" button and a link to "View Retail Locations".

TEDCO Success Story

CrispTek LLC,
Columbia, MD

The company's first product!

\$75K from TEDCO Oct. 2008
Housed in Howard Co Incubator

**Named Best New Product in 2010 Maryland
Bioscience Awards March 25, 2010**

A TEDCO Success Story

What to Do with All Those Poultry Feathers?



Biodegradable

Chesapeake Micro Products, LLC, located in Salisbury, Md., worked with the Beltsville Agricultural Research Center (BARC) to develop a manufacturing process to convert chicken feathers into pellets for injection molding machines in order to create biodegradable horticultural pots and plastic products.

Recognition for MD TEDCO

- ***Federal Laboratory Consortium Award in 2006***
- ***MD TEDCO tops Entrepreneur magazine's list of startup investors, 2008***
- ***Excellence in technology-based economic development award, State Science & Tech Inst, 2008***



Summary

- North Dakota already has many of the activities that MD TEDCO does, although they are not all in one entity
- **North Dakota should create a TEDCO** that would foster partnerships and provide funding for collaboration between researchers and the private sector. This will encourage work that can lead to new business activities and jobs.



For Further Information

www.marylandtedco.org

<http://www.michie.com/maryland/lpext.dll?f=templates&fn=main-h.htm&2.0>. (this is the statutory authorizing language for Maryland TEDCO).

http://www.flcmidatlantic.org/pdf/2006_awards/TEDCO.pdf (award nomination for the Federal Laboratory Consortium award to TEDCO in 2006)

TEDCO - Maryland's Partnership Intermediary to the Federal Labs
http://globals.federallabs.org/pdf/2009/Partnership_Intermediaries_Win_sky.pdf

For Further Information

<http://gbtechcouncil.org/ResourceCenter/TEDCO.aspx>

“Md. TEDCO tops Entrepreneur magazine's list of startup investors,” Baltimore Business Journal

<http://baltimore.bizjournals.com/baltimore/stories/2008/08/04/daily12.html>

http://www.bwipartner.org/index2.php?option=com_content&do_pdf=1&id=164 SSTI award