



**Third Frontier Joint
Commission and Board Meeting**

December 12, 2008



Strategic Framework

Strategic Framework

Establish a Targeted Industry Approach to Economic Development.

Target resources to statewide and regional industries identified as best suited to Ohio's core strengths, building the economy from our manufacturing, technology, research, and entrepreneurship strengths.

Ohio's Statewide Targeted Industries

- *Advanced Energy and Environmental Technologies*
- *Aerospace and Aviation*
- *Agriculture and Food Processing*
- *Bioscience and Bioproducts*
- *Corporate and Professional Services*
- *Distribution and Logistics*
- *Instruments, Controls, and Electronics*
- *Motor Vehicle and Parts Manufacturing*
- *Polymers and Advanced Materials*

Strategic Framework

Invest in Technological Innovation and Commercialization

Leverage our state's ongoing investment in research, product development, and technology to accelerate the pace of innovation and new product development in the areas of Ohio where industry and innovation intersect.

Integration of Technology-Based Economic Development Programs

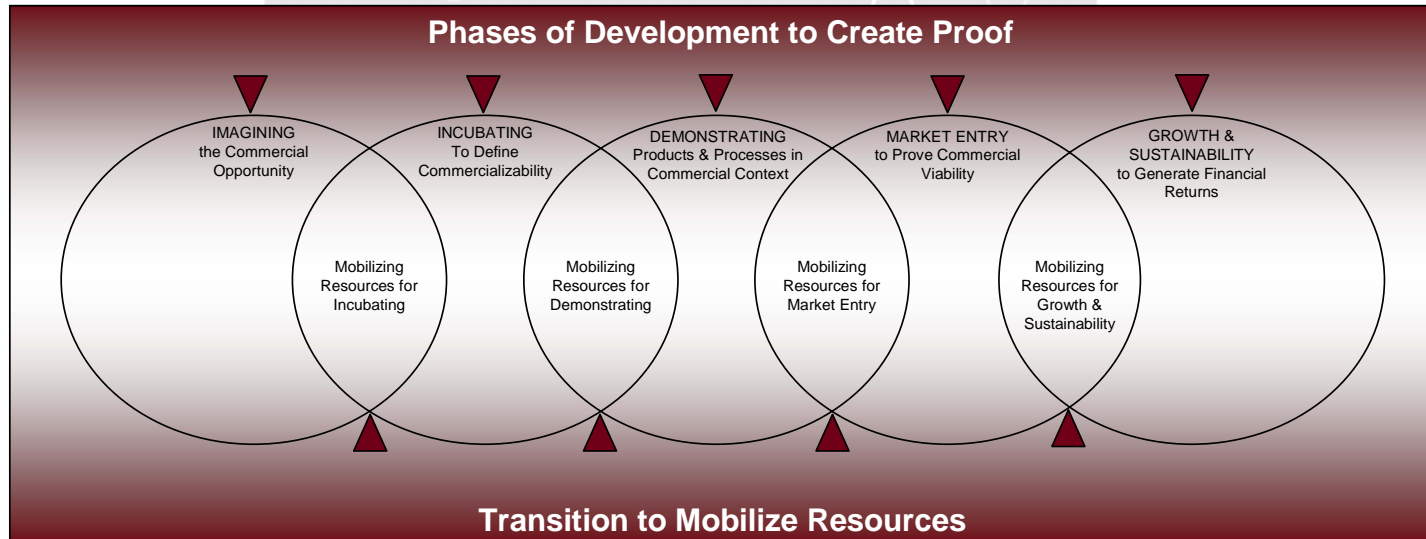
We will align, enhance, and restructure existing technology-based economic development programs, as well as develop new programs to meet identified needs to ensure we provide the right resources within every stage of the technology commercialization process.

- Integrate programs currently offered through the Ohio Third Frontier program, the Thomas Edison Program, and the Ohio Venture Capital Authority
- Leverage other state programs that can impact technology-based economic development
- Identify gaps in service delivery and develop new programs

Strategic Framework

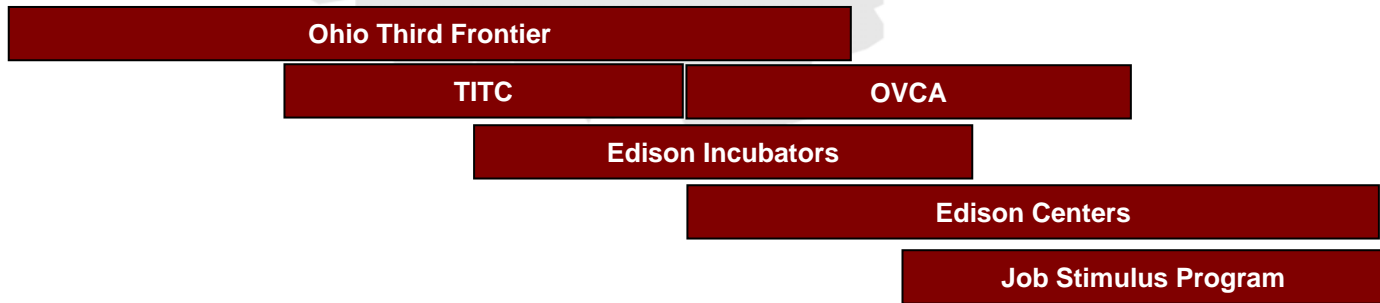
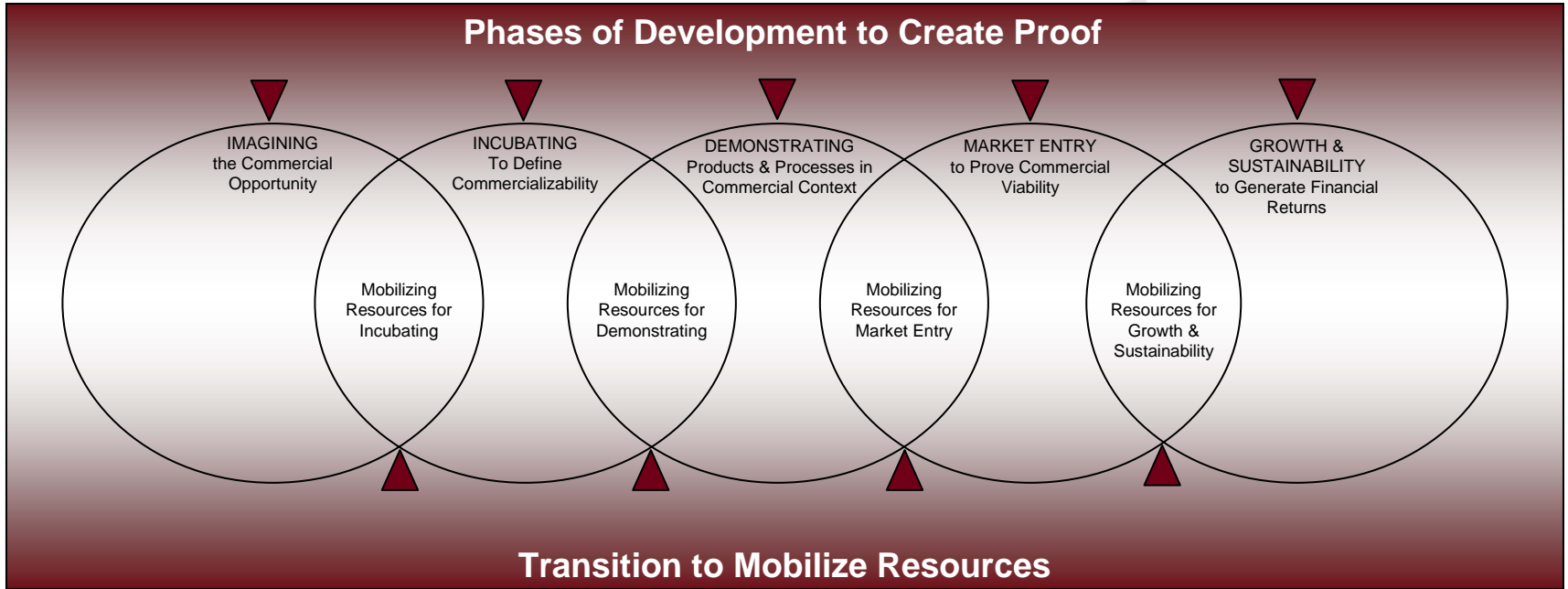
Next Generation of Ohio Third Frontier

We are firmly committed to renewal and improvement of the Ohio Third Frontier Program, currently funded through 2012, with a continued focus on supporting the five stages of commercialization.



We also will expand Ohio's Edison Program to reach all parts of our state, seek to reauthorize the Technology Investment Tax Credit Program, and enhance the leverage of the Ohio Venture Capital Authority.

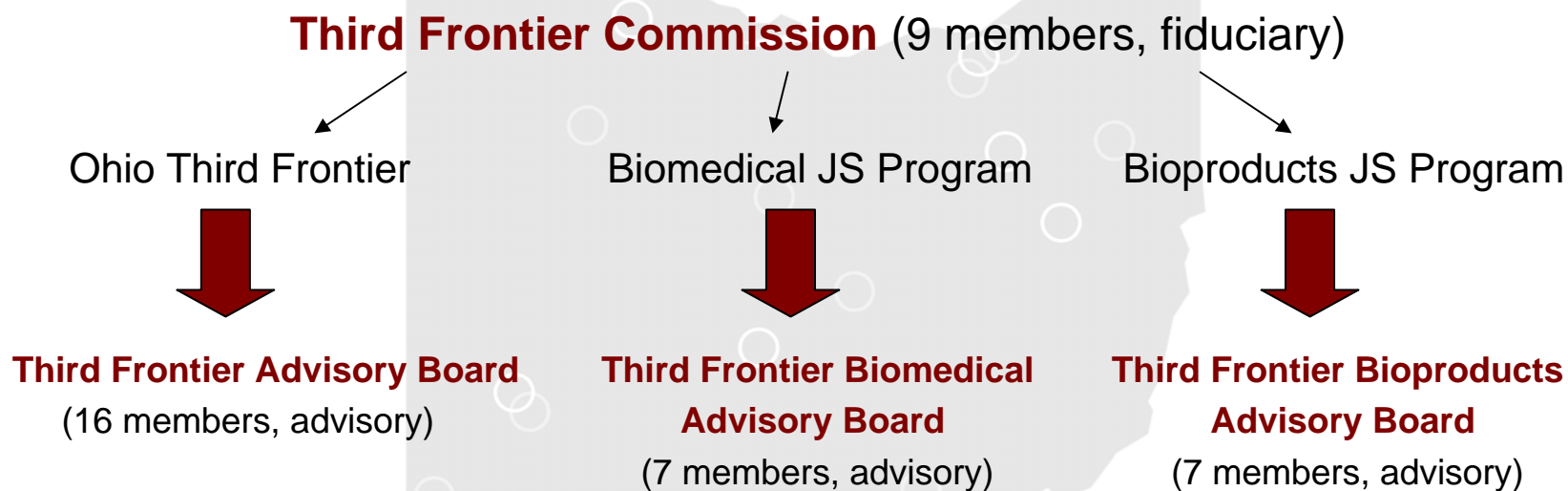
Alignment of Programmatic Investments





Commission and Boards Relationships

Commission and Boards Relationships



The Third Frontier Biomedical and Bioproducts Advisory Boards have statutory authorities distinct from one another and from the Third Frontier Advisory Board. The only common connection of all three is their role in advising the Third Frontier Commission.

Third Frontier Advisory Board

- Thomas Brady, PhD, President, CEO & Founder Plastic Technologies, Inc.
- Charles Calvert, President, Calvert Promotions
- Christopher Coburn, Executive Director, Cleveland Clinic Foundation Innovations
- Mark Collar (Chair), Venture Partner, Triathlon Medical Ventures
- Nancy Enright, Industry Research Analyst, SEIU/District 1199 WV/OH/KY
- Robert McGrath, PhD, Deputy Lab Director S&T, NREL (Battelle)
- Albert Ratner, Co-chairman of the Board, Forest City Enterprises, Inc.
- Joseph Sciabica, Executive Director, USAF Research Laboratory
- Barbara Snyder, President, Case Western Reserve University
- Robert Spada, Senator, State of Ohio
- Thomas Waltermire, CEO Team NEO

Third Frontier Advisory Board

- Luis Proenza (UA) and Jim Anderson (CCHMC) recently resigned
- Robert Spada leaving for House, new Senate appointment in CY 2009
- Robert McGrath, new position at NREL, will be asked to resign
- Joe Alutto, PhD, Executive Vice President and Provost, OSU in process
- Nancy Zimpher, PhD, President, UC in process
- Lloyd Jacobs, MD, President, UT, expected to be offered appointment
- 3 business slots unfilled, no candidates identified
- Brady, Collar, Coburn, Snyder (filling vacated slot) appointments up in March 2009

Third Frontier Biomedical Advisory Board

- Tony Dennis, PhD (Chair), President, BioOhio
- Mark Barbash, Chief Economic Development Officer, Ohio Department of Development
- William Hicks, MD. Professor of Clinical Medicine, OSUMC
- David Kay, MD, Crystal Clinic
- Kenneth Preston, Assoc. VP for Research and Director Technology Center, UA
- Baiju Shah, President and CEO, BioEnterprise
- David Scholl, PhD, President and CEO, Diagnostic HYBRIDS, Inc.

Third Frontier Bioproducts Advisory Board

- Robert Boggs (Chair), Director, Ohio Department of Agriculture
- Mark Barbash, Chief Economic Development Officer, Ohio Department of Development
- James Blank, Ph.D., Department Chair, Biological Sciences, Kent State University
- Wayne Earley, President & CEO, PolymerOhio, Inc.
- Jack Fisher, Executive Vice President, Ohio Farm Bureau Federation
- David Jones, Director of Bioproducts, Ashland Inc.
- John Lumpe, Executive Director, Ohio Soybean Association/
Ohio Soybean Council



**Update on
Bioproducts &
Biomedical
Job Stimulus
Programs**

Investments, Timing and Source of Funds

	Total Available	2009	2010	2011
Biomedical	\$100 Million	\$40 million	\$40 Million	\$20 Million
<i>Funded through Tobacco Settlement Funds</i>				
Bioproducts	\$50 Million	\$20 Million	\$20 Million	\$10 Million
<i>Funded through Tobacco Settlement Funds</i>				



Background

- Both Advisory Boards have met and developed program plans and budgets
 - Biomedical Plan approved by Commission on October 23rd
 - Commission will consider and vote on Bioproducts Plan today



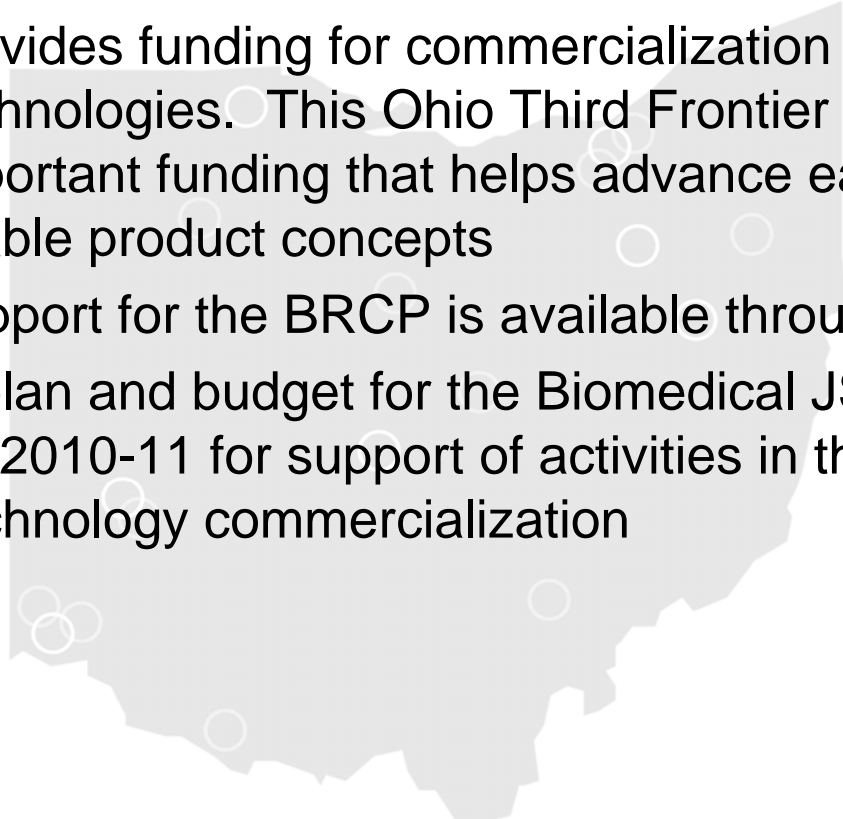
Both Plans have Growth Funds

- The Growth Funds will be established to support high job creation potential attraction and expansion opportunities that would accelerate the growth of the two clusters.
- The focus will be on investments that:
 - Create or retain Ohio jobs
 - Expand existing Ohio companies as well as attract new companies
 - Promote supply chain expansion in Ohio
 - Leverage the State's multiple research and commercialization assets
- The funding process will include releasing a Notification of Funds Available (NOFA) so that proposals can be submitted on a competitive rolling basis with evaluation based on a competitive standard

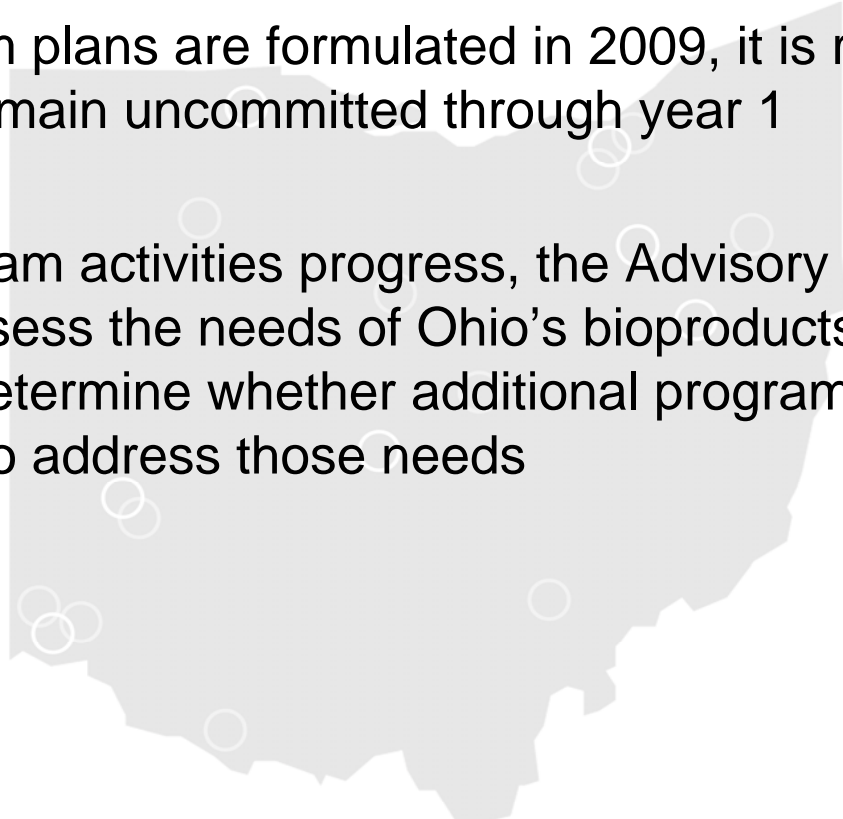
Ohio Bioproducts Capacity Building Fund

- The Ohio Bioproducts Capacity Building Fund will be established to support industry enabling infrastructure/ support opportunities that will accelerate the growth of the bioproducts supply chain industry in Ohio. The funding will seek to:
 - Support the development of the supply chain by making available joint-use infrastructure (i.e., equipment, refining capacity, pilot-scale demonstration sites, qualification and testing of new materials, etc.)
 - Form solid collaborative activities and initiatives that can help sustain the growth of the supply chain through the advancement of the industry and the development of new innovative products.
- The funding process will including releasing a Request for Proposals (RFP) so that proposals can be submitted on a set timeline and evaluated against one another.

JS Biomedical Technology Commercialization Fund

- The BRCP provides funding for commercialization of platform biomedical technologies. This Ohio Third Frontier program represents important funding that helps advance early-stage research to viable product concepts
 - Committed support for the BRCP is available through FY 2009
 - The program plan and budget for the Biomedical JS includes a placeholder in 2010-11 for support of activities in the general category of technology commercialization
- 

Both Plans Incorporate Uncommitted Funds

- As the program plans are formulated in 2009, it is recommended that funding remain uncommitted through year 1
 - As initial program activities progress, the Advisory Boards will continue to assess the needs of Ohio's bioproducts and biomedical clusters and determine whether additional programming could be implemented to address those needs
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General Administrative Considerations

- The tobacco settlement funds to support the Bioproducts and Biomedical JS Programs are tied up in litigation and the timing of the resolution of this court action is uncertain.
- It is expected that planning and administrative preparations for program implementation will continue to progress.
 - In the near term this would include preparation to issue the NOFAs for the Growth Funds and an RFP for the Capacity Building Fund. However, neither the NOFAs nor the RFP would be publicly released until funding is actually available. Absent this certainty, it would be untenable for entities to plan an expansion, attraction, or capacity building project reliant on this source funding.

Bioproducts Budget Plan

	FY 2009	FY 2010	FY 2011	Total
Bioproducts Growth Fund	\$10 MM	\$15 MM	\$ 5 MM	\$30 MM
Bioproducts Capacity Building Fund	\$ 5 MM	\$ 5 MM	\$ 5 MM	\$15 MM
Uncommitted	\$ 5 MM	---	---	\$ 5 MM
Total	\$20 MM	\$20 MM	\$10 MM	\$50 MM

Note: Administrative funds are imperative to implementing a successful program. The Third Frontier Bioproducts Advisory Board recommends that efforts should go forward to acquire an appropriate amount of administrative support for the Bioproducts JS Program either from existing program resources or an additional appropriation.

Biomedical Budget Plan

	FY 2009	FY 2010	FY 2011	TOTAL
BIOMEDICAL GROWTH FUND	\$16 MM	\$20 MM	\$20 MM	\$56 MM
TECHNOLOGY COMMERCIALIZATION		\$17 MM	\$17 MM	\$34 MM
UNCOMMITTED FUNDS				\$10 MM
TOTAL	\$16 MM	\$37 MM	\$37 MM	\$100 MM
BRCP (OTF Committed)	\$23 MM			\$23 MM



Performance Themes/Trends

Performance Metrics 1/08 – 6/08

Performance Criteria	As of 12/31/07	As of 06/30/08	Percentage Change
State Funds Awarded	\$637,944,547	\$873,462,907	36.9%
State Funds Expended	\$291,397,713	\$343,299,994	17.8%
Cost Share Reported	\$759,436,761	\$891,522,131	17.4%
Leveraged Dollars	\$2,406,888,869	\$3,075,785,242	27.6%
Leverage Ratio*	8.3 : 1	8.9 : 1	8.0%
Direct Jobs Created and Retained	5,641	6,795	20.5%
Companies Created, Attracted, Capitalized	383	466	21.7%
Average Salary	\$67,277	\$64,237	-4.5%
Cost Per Job**	\$51,657	\$50,520	-2.2%

* Leveraged dollars without cost share/state funds expended.

** Funds expended/jobs.



Program Name	State Funds Awarded	State Funds Expended	Cost Share and Match to Date	Leverage	Jobs Created / Jobs Retained	Companies Created & Capitalized	Leverage Ratio	Cost per Job Created	Average Salary
Biomedical Research Commercialization Program	\$128,440,644	\$82,868,101	\$137,930,104	\$735,432,367	1,365	36	9 : 1	\$60,727	\$59,297
Engineering Research Commercialization Program	\$61,713,451	\$12,161,863	\$19,833,427	\$50,805,378	161	3	4 : 1	\$75,586	\$65,400
Entrepreneurial Signature Program	\$84,800,000	\$17,810,225	\$22,478,847	\$70,096,395	332	63	4 : 1	\$53,597	\$67,831
Fuel Cell Program	\$35,612,657	\$19,793,010	\$16,462,294	\$84,879,106	242	6	4 : 1	\$81,789	\$63,348
Ohio Research Commercialization Grant Program	\$11,243,637	\$6,547,648	\$1,417,885	\$99,773,256	209	23	15 : 1	\$31,328	\$51,016
Ohio Research Scholars Program	\$143,810,334	\$0	\$0	\$0	0	0	0 : 1	\$0	\$0
Pre-Seed and Seed Funds	\$28,803,682	\$23,236,357	\$186,883,436	\$1,058,419,595	1,944	202	46 : 1	\$11,951	\$65,546
Third Frontier Advanced Energy Program	\$10,749,252	\$0	\$0	\$0	12	0	0 : 1	\$0	\$51,167
Third Frontier Action Fund	\$17,961,452	\$16,432,026	\$27,842,421	\$120,257,369	399	54	7 : 1	\$41,183	\$51,476
Wright Centers of Innovation (Biomedical)	\$87,313,123	\$71,984,816	\$215,646,532	\$406,027,281	811	20	6 : 1	\$88,815	\$93,439
Wright Centers of Innovation (Engineering & Physical Sciences)	\$148,094,300	\$60,731,807	\$205,808,428	\$323,205,194	928	27	5 : 1	\$65,423	\$50,905
Wright Mega-Center of Innovation	\$60,000,000	\$3,796,781	\$2,632,156	\$15,396,500	32	13	4 : 1	\$118,649	\$89,000
Wright Projects	\$52,220,375	\$27,937,360	\$54,586,601	\$111,492,801	361	19	4 : 1	\$77,488	\$61,340
Totals:	\$873,462,907	\$343,299,994	\$891,522,131	\$3,075,785,242	6,795	466	8.9 : 1	\$50,520	\$64,237

Some Key Trends

- Pre-seed Funds continue to demonstrate highest leverage
- SBIR follow-on program demonstrates high leverage with small investments
- Entrepreneurial Signature Programs showing progress
- Wright Centers reaching maturity with different futures
- Fuel Cell program has moved dramatically toward commercialization
- Impact of Advanced Energy and Research Scholars yet to be seen
- Clusters are forming: fuel cells, photovoltaics, medical imaging, environmental sensors, cardio-vascular

Strategy 1: Increase quantity of high quality research with commercial relevance to Ohio

- **Federal and Industrial Research Leverage is \$1.36 billion**
- **NSF Industry/University Cooperative Research Center**
 - Center for Advanced Polymer and Composite Engineering – OSU
- **NSF Nanoscale Science and Engineering Center**
 - Center for Affordable Nanoengineering of Polymer Biomedical Devices – OSU
- **National Center for Regenerative Medicine – CWRU**
- **DOE Solar America Center of Excellence**
 - Photovoltaic Innovation Center – UT
- **A 200% increase in federal and industrial R&D between 2006 and 2008**

Strategy 2: Expand access and availability of investment capital to grow and attract new companies

- TITC has financed 419 early-stage companies
- Ohio Third Frontier Pre-seed Funds have financed 202 early-stage companies
- OVCA has financed 22 early-stage companies and leveraged \$29 M into \$165M investment into Ohio companies
- Collectively, these three programs provide a pipeline of capital available to companies as they mature
 - AcelleRX – TITC, NE ESP, Reservoir + Fletcher Spaght + Early Stage Partners
 - CleveX – TITC, OTAF, Reservoir
 - ThinkVine – TITC, SW ESP, Draper Triangle
 - CH Mack – TITC, SW ESP, Draper Triangle

Strategy 3: Grow and nurture an experienced pool of technology entrepreneurs

- 32 Entrepreneurs-in-Residence hired by ESPs
- Sample of Key Out-of-State program hires:
 - Mark Low – Director, GCIC, from Seattle, WA
 - Don Brown, CEO, Arteriocyte, from Boston
 - John Glazer – Director, SE ESP, from Ann Arbor, MI
 - Al Lucas – VP, AssureRX, from New Jersey
 - Matt Carbonara – EIR, TechColumbus, from California
 - Albert Green – CEO, Kent Displays, from Washington, DC
 - Lance Criscuolo – CEO, Zyvex Performance Materials, from Austin, TX
- 358 companies being incubated in Edison Incubators

Strategy 4: Support the technical and financial needs of existing companies

- **Ohio Third Frontier product sales are \$490 million**
- **Rolls-Royce – Fuel Cell Systems – locating new activities to Ohio**
- **GrafTech – Thermal Management – 2 new patents in new business**
- **Parker-Hannifin—Wind Energy—new corporate direction**
- **American Trim—new automotive parts investment**
- **Swagelock – Low Temperature Carbonization – 23 jobs created**
- **The Andersons – Advanced Granule Delivery Systems**

- **Edison Centers work with existing companies**
 - Sales increase of \$700 million/year
 - Cost savings of \$65 million/year
 - New Product Development Projects 165/year

Strategy 5: Contribute to expansion of a technically competent workforce

- 1,050 Third Frontier Internships in past 12 months
- 337 Companies secured interns
- Advanced Manufacturing (536 interns); Information Technology (253); Advanced Materials (110); Bioscience (71); I.C.E. (54)
- Rhodes State, Stark State and Hocking College have all received capital to support commercialization and job training
- New Wright Project RFP requires secondary use of capital to be for education and training purposes

Metrics for Technology-based Economic Development

	Budget	Leveraged Investments	Product Sales Impact	Cost Savings Impact	Companies Created/Served	Jobs Created
Ohio Third Frontier	\$1.6 B / \$873M invested	\$3.1 B	\$490M	-	466	6,795
Ohio Thomas Edison Centers	\$11M/yr	-	\$700M	\$195M	91	8,731
Ohio Venture Capital Authority	\$150 M / \$31M invested	\$165M	-	-	22	174
Technology Investment Tax Credit	\$30M / \$29M invested	\$105M	-	-	419	1,800
Third Frontier Internships	\$3M	\$6M	-	-	337	1,050
Thomas Edison Incubators	\$3M/yr	\$104M	\$224M		358	558
Innovation Ohio Loan Program	\$55M	\$85M	-	-	56	2,100



Third Frontier Renewal Strategy

Third Frontier Renewal Strategy

- We must begin now to create the vision for the next generation of the Third Frontier, and lay the foundation for obtaining the funding commitments necessary to realize that vision.
- The Third Frontier Commission and Advisory Board will continue to play a central role in planning for the future of the Third Frontier. They will be the main consumer of the results from studies and stakeholder inputs and, ultimately, will be responsible for the creation and approval of a strategy for the next generation of the Third Frontier.
- With a significant shared interest in the Third Frontier and having a complementary roll to Development in achieving the state's short and long term economic development goals, Regents should be implicitly included as a partner in the proposed activities below wherever appropriate.

Third Frontier Renewal Strategy

A number of activities are in process or proposed to advance the renewal of the Third Frontier:

FY 2009

Third Frontier Impact Study
Marketing/PR Campaign

Regional Stakeholder Meetings

Continuous engagement of stakeholders is essential to understanding what a next generation OTF should look like and to build support for continued funding of the OTF. It is proposed that regional roundtables be held in the second half of FY 2009 in the six OTF regions.

Third Frontier Renewal Strategy

FY 2010

Update R&D Strengths Inventory

An updated strengths assessment would provide the necessary intelligence to reaffirm those technology platforms that continue to have relevance to today's economic priorities, and uncover emerging areas of opportunity to grow Ohio's industrial sectors of tomorrow.

TFAB/TFC Develop Strategic Principles

By the end of FY 2010, the Commission and Board would complete a set of strategic principles for the next generation of the OTF.

Leadership Buy-in Strategic Principles/ Develop Plan For Funding

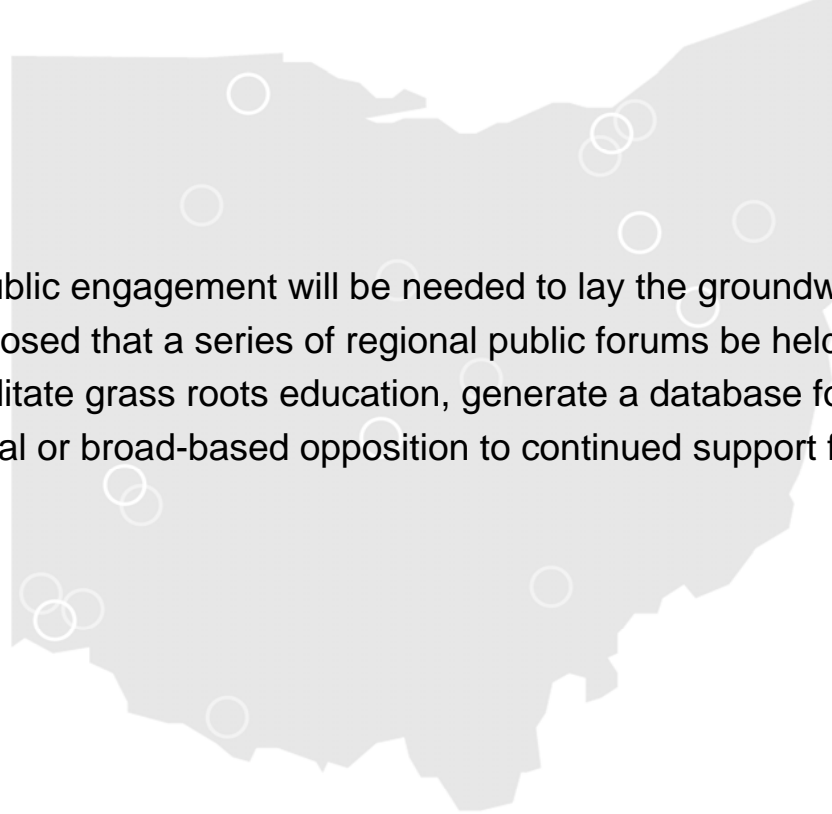
It is proposed that detailed briefings be held first with the Governor and key staff and then legislative leadership to get buy-in on the strategic principles and to map out the plan for funding OTF beyond FY 2012

Third Frontier Renewal Strategy

FY 2011

Public Forums

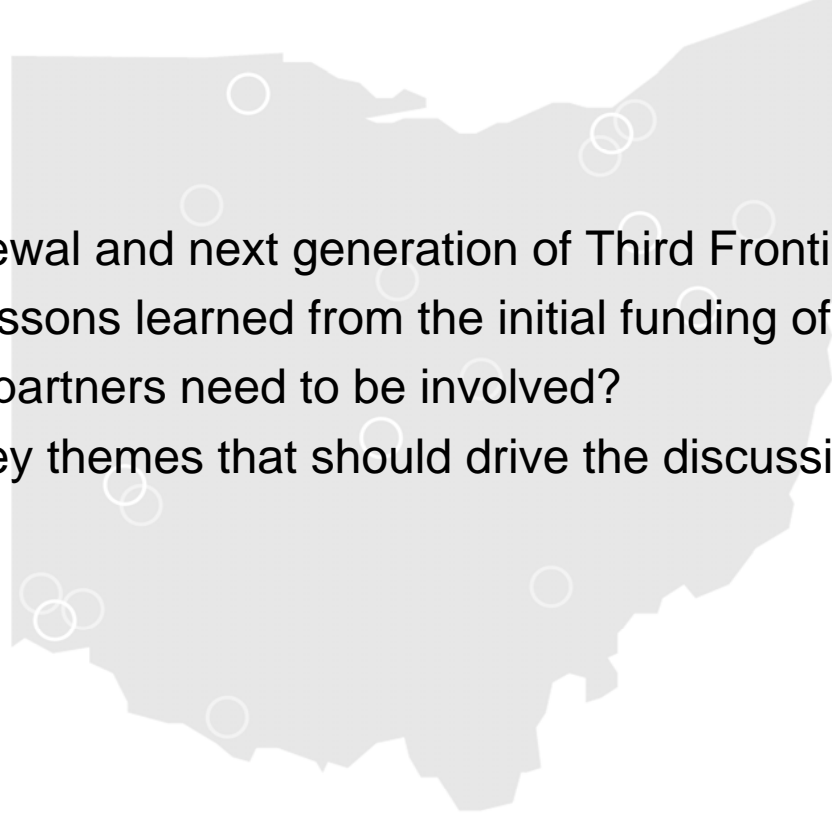
A broadening base of public engagement will be needed to lay the groundwork for a potential bond initiative. It is proposed that a series of regional public forums be held in FY 2011. The public forums would facilitate grass roots education, generate a database for future outreach, and identify potential local or broad-based opposition to continued support for the OTF.



Third Frontier Renewal Strategy

Questions:

- What does renewal and next generation of Third Frontier mean to you?
- What are the lessons learned from the initial funding of Third Frontier?
- What strategic partners need to be involved?
- What are the key themes that should drive the discussion of renewal?





SRI International

Background

- At the May TFAB meeting, it was recommended that an external evaluation be conducted to assess the economic impact of the Ohio Third Frontier programs
- Since that time, and in light of Development's Strategic Plan calling for the alignment of all technology-based economic development (TBED) programs, the scope of the study was expanded to include Edison, OVCA, and TITC
- Both the TFC and the Industrial Technology Enterprise Advisory Committee that oversees the Edison and TITC programs approved the assessment being conducted

Purpose of Study

- The assessment will examine how Ohio's research and industrial base, and ultimately the citizens of Ohio, have been impacted by the following areas:
 - Catalyzing research and commercialization collaborations
 - Fostering entrepreneurial support and access to capital
 - Developing industrial clusters in technology sectors
 - Encouraging product innovation and technology insertion
 - Assisting with workforce development

Solicitation Process

- An RFP outlining the services requested was developed and sent to over 25 organizations from around the country that are known to perform this type of work
- The RFP was also advertised on the Third Frontier website and SSTI published the opportunity in its national newsletter
- Six proposals were received
- A review team was formed and a score sheet was created by which the six proposals were evaluated
- Two proposals were ranked consistently high by all six reviewers
- Questions were prepared for the two bidders and oral interviews were conducted
- The review team met again and unanimously selected SRI International to conduct the impact assessment

SRI International

- SRI International is an independent, non-profit research organization formerly known as Stanford Research Institute
- The project team is based within SRI's Center for Science, Technology, and Economic Development and includes researchers from SRI's partner, the Georgia Tech School of Public Policy
- For the past 20 years, SRI has evaluated national, state, and regional science and technology programs around the world, including:
 - National Science Foundation's (NSF) Engineering Research Centers
 - National Institutes of Standards and Technology's (NIST) Manufacturing Extension Partnerships program
 - Oklahoma Technology Commercialization Center and Technology Business Finance Program
 - Georgia Microsystem Packaging Research Center



2009-2012 Growth Plan

Growth Plan: Assumptions and Potential Actions

Assumptions:

- New funds after 2012
- Replace biomedical funds lost to securitization (2010-2012); \$20 million/year

Actions:

- Leverage and integrate all TBED investments (Edison, OTF, OVCA, other ODOD, Regents, OAQDA)
- Develop new strategically important initiatives to fill market defined needs
- Strengthen regional partnerships to better define needs/focus and further integrate their local capacity and resources into the service delivery system
- Catalyze use of place based strategies to promote regional innovation
- Launch an aggressive marketing/pr campaign to establish value/brand messages
- Leverage the Job Stimulus Package Fund (JSPF)
- Maintain targeted investment in the biomedical focus area

Growth Plan: Proposed Budget

Operating Funds	2009	2010	2011	2012	Total
APPROPRIATION AMOUNT (millions)	130	87	87	87	391
Research & Comm Collaborations	86	45	45	49	225
Wright Centers					
Wright Projects	X	X	X	X	
Biomedical RCP	X	X	X	X	
Engineering & PS RCP	X	X	X	X	
Ohio Research Scholars	X				
Research Incentive	X				
DOE EFRC Centers (NRDC)	X				
Entrepreneurial Support	8	9	10	12	39
Entrepreneurial Signature Program	X	X	X	X	
Pre-seed Fund Initiative				X	
Venture Loan Fund		X			
Cluster Development	23	23	23	26	95
Advanced Energy	X	X	X	X	
Fuel Cell	X	X	X	X	
Targeted Industry Attraction	X	X	X	X	
Product Innov & Tech Insertion	2	2	2	2	8
ORCGP	X	X	X	X	
Workforce	1	1	1	1	4
Third Frontier Internship Program	X	X	X	X	
Administrative	5	5	5	5	20
New Wright Capital Funds	50	50	50	50	200
TOTAL	175	135	136	145	591

Third Frontier Funding Sources

- **Third Frontier Research and Development Fund** (voter approved bond)
- **Wright Capital Fund** (Higher Education Capital Improvement bond)
- **Biomedical Research and Technology Transfer Trust Fund** (Tobacco settlement)
- **Third Frontier Action Fund** (General Revenue Fund)

FY 2010 Budget Appropriations

FY 2010	TFRDF*	WCF**	BRTTTF***	TFAF****	TOTAL
FY 2010 APPROPRIATION	\$50,000,000	\$50,000,000	\$0	\$16,790,000	\$116,790,000

- * \$50 million from FY 2009 will continue to be carried forward to FY 2012
- ** Pending approval of FY 09-10 Capital Bill request
- *** No identified replacement for funding lost to securitization
- **** GRF funding subject to expected budget cuts



Third Frontier Commission Meeting



**Bioproducts
Job Stimulus
Program & Budget
Recommendations**

Background

- Bipartisan Jobs Stimulus Program passed May, 2008
- \$1.57 billion investment program
- Projected to create 57,000 jobs
- Largest infrastructure/jobs program in 30 years
- Funding for:
 - Industry cluster initiatives
 - Internships/Co-Ops
 - Infrastructure
 - Restoration of historic properties
 - Brownfield redevelopment and farmland preservation

Investments, Timing and Source of Funds for Industry Cluster and Internship Initiatives

	Total Available	2009	2010	2011
Advanced Energy	\$150 Million	Bond capacity spread over 3 years		
<i>Funded through Coal Development Funds & Facilities Establishment Loan Fund</i>				
Biomedical	\$100 Million	\$40 million	\$40 Million	\$20 Million
<i>Funded through Tobacco Settlement Funds</i>				
Bioproducts	\$50 Million	\$20 Million	\$20 Million	\$10 Million
<i>Funded through Tobacco Settlement Funds</i>				
Logistics/Distribution	\$100 Million	\$50 Million	\$25 Million	\$25 Million
<i>Funded through Facilities Establishment Loan Fund</i>				
Workplace Coop / Internships	\$250 Million	Funded over 5 years – FY10 through FY14		
<i>Program Development and Oversight by the University System of Ohio</i>				

Third Frontier Bioproducts Advisory Board Members

- Robert Boggs, *Chair*, Director, Ohio Department of Agriculture
- Mark Barbash, Chief Economic Development Officer, Ohio Department of Development
- James Blank, Ph.D., Department Chair, Biological Sciences, Kent State University
- Wayne Earley, President & CEO, PolymerOhio, Inc.
- Jack Fisher, Executive Vice President, Ohio Farm Bureau Federation
- David Jones, Director of Bioproducts, Ashland Inc.
- John Lumpe, Executive Director, Ohio Soybean Association/
Ohio Soybean Council

Bioproducts Program Plan Development Steps

- September 9th a stakeholder discussion on the Job Stimulus Package was held at the Ohio Department of Agriculture where input was sought.
- October 23rd the Third Frontier Bioproducts Advisory Board (TFBAB) met to begin developing the Bioproducts Job Stimulus Program.
- November 10th TFBAB met to discuss key guiding principles for funding
- December 2nd TFBAB met to discuss evaluation criteria and potential investment vehicle options – program plan and budget were approved.
- December 12th TFBAB met to discuss methods for program outreach and Letter of Intent content requirements.

Ohio Bioproducts Growth Fund

- The Ohio Bioproducts Growth Fund will be established to support high job creation potential attraction and expansion opportunities that would accelerate the growth of Ohio's bioproducts cluster.
- The focus will be on investments that:
 - Create or retain Ohio jobs
 - Expand existing Ohio bioproduct companies as well as attract new bioproduct companies to the State
 - Promote bioproduct supply chain expansion in Ohio
 - Leverage the State's multiple research and commercialization assets
 - Enable the commercialization of bioproduct technologies in specific areas of Ohio strength

Ohio Bioproducts Growth Fund

- Company attraction will focus on proactive efforts to identify a small number of high impact, high visibility deals for which larger incentive packages will be offered. Target opportunities in this category will include:
 - Anchor companies that will become a magnet for additional attraction, company formation or otherwise promote supply chain expansion in Ohio
 - Major R&D or manufacturing operations of existing companies

Ohio Bioproducts Growth Fund

- Company expansion could include larger deals but will also consider a greater number of smaller opportunities, especially companies that are progressing through the commercialization pipeline as a result of previous investment by the Third Frontier and its early-stage capital funds. Target opportunities in this category will include:
 - Medium to large size existing Ohio bioproducts firms committed to a major expansion or acquisition
 - High growth early-stage companies with near to market product opportunities that have been validated by acquisition of significant investment capital

Ohio Bioproducts Growth Fund

- Job Stimulus funding could be used for a wide variety of purposes including, but not limited to, the following:
 - Finalizing product certification and testing
 - Finalizing product designs
 - Establishing manufacturing scale-up capacity
 - Providing working capital to support company growth
 - Supporting sales development and marketing efforts
 - Supporting customer based demonstrations
- \$30 million from the JS Bioproducts Program will be dedicated to this program over three years.

Ohio Bioproducts Growth Fund

Competitive Funding Approach

- Launch an aggressive media campaign
- Conduct major outreach effort to identify candidate companies and pursue aggressively
- Release a Notification of Funds Available (NOFA) so that proposals can be submitted on a competitive rolling basis with evaluation based on a competitive standard
- Make awards of JS funds packaged with other economic development incentives when appropriate; leave open-ended the amount of funding offered per deal to allow for maximum flexibility. Consider all types of investment vehicles on case by case basis.
- Process proposals and make awards within the quarter or no later than the next quarter a proposal is received.

Ohio Bioproducts Growth Fund

Key evaluation criteria will include:

- Business Opportunity Analysis:
 - Strength of team/expertise, ability to capture market share, scale of project for Ohio, strength of business plan, ability to address project risks/impediments
- Financial Strength Analysis
 - Financial strength of the company, feasibility of project's budget, leverage of State funds
- Economic Impact Analysis
 - Job creation/retention impact, fit within/value to the Ohio bioproducts cluster, importance to other Ohio vertical industry strengths, ability to enhance Ohio's reputation as an international bioproducts leader
- Technical Analysis
 - It is the intent of this program to fund companies that have been validated by financial external markets. However, when a company meets both the business opportunity and economic impact criteria, but financial validation has not yet been achieved, a technical evaluation will be performed by an independent external reviewer to better understand the nature of the opportunity.

Ohio Bioproducts Capacity Building Fund

- The Ohio Bioproducts Capacity Building Fund will be established to support industry enabling infrastructure/ support opportunities that will accelerate the growth of the bioproducts supply chain industry in Ohio. The funding will seek to:
 - Support the development of the supply chain by making available joint-use infrastructure (i.e., equipment, refining capacity, pilot-scale demonstration sites, qualification and testing of new materials, etc.)
 - Form solid collaborative activities and initiatives that can help sustain the growth of the supply chain through the advancement of the industry and the development of new innovative products.
- The end goal will be to make strategic investments that help link and then expand the capacity of Ohio's bioproducts infrastructure in order to develop the supply chain, which will strengthen Ohio's emerging bioproducts industry cluster and create competitive advantage for Ohio.

Ohio Bioproducts Capacity Building Fund

- Job Stimulus funding could be used for a wide variety of purposes including, but not limited to, the following:
 - Expanding agbiorefining capacity to meet the need for innovators to make large samples of new materials for pilot and pre-product scale runs of candidate agbiobased products.
 - Initiating a network of development capabilities, available laboratory space, pilot plant facilities, and associated technical management to qualify new agbiobased materials in various chemical/polymer applications in order to accelerate commercialization.
 - Creating a Bioproducts Technology Center that links and fosters the coordination and interaction of industry, academia, and the public sectors to foster knowledge, research, and the commercialization of technologies to advance the industry cluster in Ohio.

Ohio Bioproducts Capacity Building Fund

- **Leverage:**
 - Projects should be collaborations among Ohio higher education institutions, non-profit research organizations, and Ohio companies.
 - Awards will be made in the range of \$1 million to \$5 million and require at a minimum 1:1 cost share.
 - It is envisioned that the capacity building investments will be of significant scale to alter the landscape of the development of bioproducts in the State of Ohio.
 - Preference will be given to those projects that can leverage state resources to the greatest extent, thereby indicating the support of industry and others.
- \$15 million from the JS Bioproducts Program will be dedicated to this program over three years.

Ohio Bioproducts Capacity Building Fund

Competitive Funding Approach

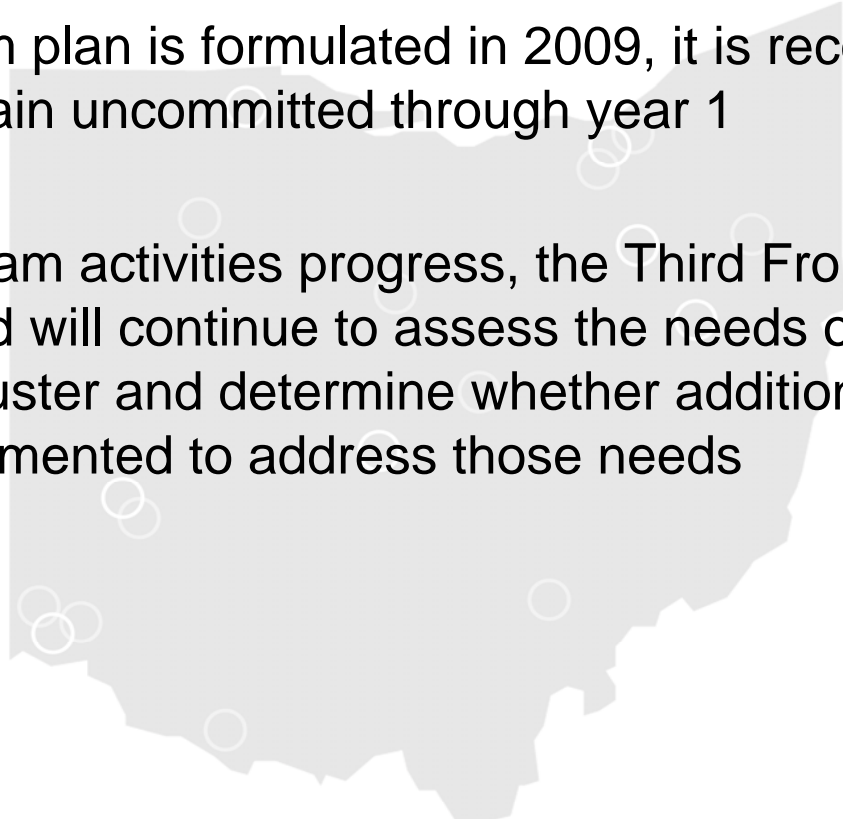
- Launch an aggressive media campaign
- Conduct major outreach effort to identify candidate projects to augment self-identified opportunities
- Release a Request for Proposals (RFP) so that proposals can be submitted on a set timeline and evaluated against one another
- Retain an external reviewer to assist with technical aspects of the due diligence process

Ohio Bioproducts Capacity Building Fund

Key evaluation criteria will include:

- **Value-Added for Ohio**
 - Impact on Ohio, importance to bioproducts industry, importance to other Ohio vertical industry strengths
- **Project Leadership**
 - Strength of team/expertise. institutional commitment
- **Leverage of State funds**
- **Alignment with Ohio Interests**
 - Consistency with State and regional priorities, ability to build on other investments
- **External Technical Evaluation**
 - Ability to addresses significant scientific/technical objectives, scientifically and technologically feasible, ability to generates the proof necessary to attract additional financial resources required to advance the project, develops statewide capacity that will support the future technological innovations required to fully realize commercial potential of the bioproducts industry.

Uncommitted Funds

- As the program plan is formulated in 2009, it is recommended that \$5 million remain uncommitted through year 1
 - As initial program activities progress, the Third Frontier Bioproducts Advisory Board will continue to assess the needs of Ohio's bioproducts cluster and determine whether additional programming could be implemented to address those needs
- 

General Administrative Considerations

- It is important to recognize that there are no administrative funds available for the Bioproducts Job Stimulus program.
- Therefore, activities such as proposal evaluation and diligence, administrative functions such as media campaigns, and other outreach activities must be performed by leveraging existing activities, programs, resources, and entities as outlined above.
- As constituted through current legislation, the Bioproducts Job Stimulus program must use funds for external projects not administrative support, studies, or services.

General Administrative Considerations

- The tobacco settlement funds to support the Bioproducts JS Program are tied up in litigation and the timing of the resolution of this court action is uncertain.
- It is expected that planning and administrative preparations for program implementation continue to progress.
 - In the near term this would include preparation to issue a NOFA for the Bioproducts Growth Fund and an RFP for the Capacity Building Fund. However, neither the NOFA nor the RFP would be publicly released until funding is actually available. Absent this certainty, it would be untenable for entities to plan an expansion, attraction, or capacity building project reliant on this source funding.

Budget Plan

	FY 2009	FY 2010	FY 2011	Total
Bioproducts Growth Fund	\$10 MM	\$15 MM	\$ 5 MM	\$30 MM
Bioproducts Capacity Building Fund	\$ 5 MM	\$ 5 MM	\$ 5 MM	\$15 MM
Uncommitted	\$ 5 MM	---	---	\$ 5 MM
Total	\$20 MM	\$20 MM	\$10 MM	\$50 MM

Note: Administrative funds are imperative to implementing a successful program. The Third Frontier Bioproducts Advisory Board recommends that efforts should go forward to acquire an appropriate amount of administrative support for the Bioproducts JS Program either from existing program resources or an additional appropriation.





Third Frontier Fuel Cell Awards

Third Frontier Fuel Cell Awards

Advanced Research, Development & Commercialization Projects

LOI Number	Company Name and Address	State Funds
09-022	Energy Technologies, Inc Mansfield, OH 44902	1,000,000.00
09-019	Rolls-Royce Fuel Cell Systems (US) Inc North Canton, OH 44720	600,000.00
09-042	Crown Equipment Corporation New Bremen, OH 45689	1,000,000.00
09-025	Lockheed Martin MS2 Defense and Surveillance Akron, OH 44315	998,393.00
09-012	Battelle Memorial Institute Columbus, OH 43201	1,000,000.00
State Funds Requested:		\$4,598,393.00

Third Frontier Fuel Cell Awards

Applied Research & Development Projects

LOI Number	Company Name and Address	State Funds
09-002	Contained Energy Cleveland, OH 44106	350,000.00
09-036	OSURF Columbus, OH 43210	350,000.00
State Funds Requested:		\$700,000.00

Total State Funds Requested \$5,298,393.00



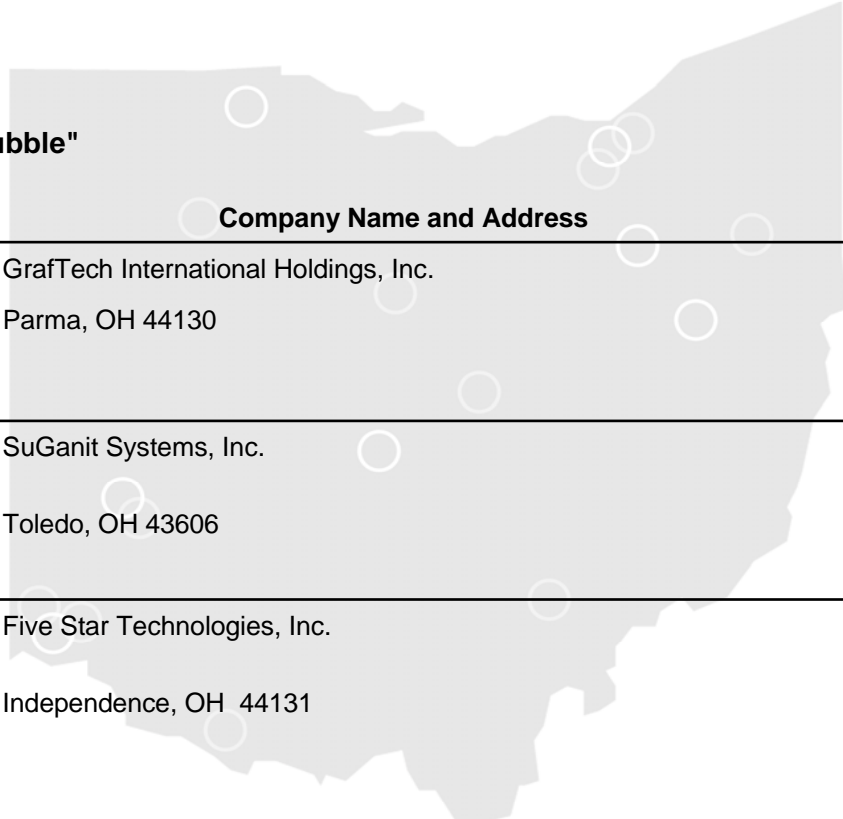
Third Frontier Advanced Energy Awards

Third Frontier Advanced Energy Awards

<u>LOI Number</u>	<u>Company Name and Address</u>	<u>State Funds</u>
09-076	Parker Hannifin Corp Cleveland, Oh 44124	1,000,000.00
09-001	Xunlight Corporation Toledo, OH 43607	995,577.00
09-073	Tremco Incorporated Beachwood, OH 44122	1,000,000.00
09-082	SCI Engineered Materials, Inc. Columbus, OH 43228	708,715.20
09-007	WebCore Technologies, Inc Miamisburg, OH 45342	1,000,000.00
09-039	Global Cooling Mfg. Co. Athens, OH 45701	1,000,000.00
09-026	Hyper Tech Research, Inc Columbus, OH 43212	1,000,000.00
09-041	EMTEC Dayton, OH 45420	1,000,000.00
09-063	Industrial Railway Switching & Services, Inc. Lorain, OH 44055	450,000.00
State Funds Requested:		\$8,154,292.00

Third Frontier Advanced Energy Awards

Proposals "On The Bubble"



LOI Number	Company Name and Address	State Funds
09-008	GrafTech International Holdings, Inc. Parma, OH 44130	448,475.00
09-050	SuGanit Systems, Inc. Toledo, OH 43606	999,900.00
09-030	Five Star Technologies, Inc. Independence, OH 44131	1,000,000.00