

**Ohio**

**Third Frontier**

Innovation Creating Opportunity

# *Commission Meeting*

**August 23, 2012**

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# Agenda

- |      |                                                                                                                                     |                           |
|------|-------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| 1:00 | Call to Order<br>Approval of 07/25/2012 Meeting Minutes                                                                             | Chris Schmenk (Chair)     |
| 1:15 | Industrial Research and Development Center Program<br>Youngstown State University: <i>TechBelt Additive Manufacturing Institute</i> | Mike McKay                |
| 1:30 | Technology Validation and Start-Up Fund<br>Presentation of Evaluators Report                                                        | Andy Hansen<br>YourEncore |
| 2:00 | Entrepreneurial Signature Program<br>CincyTech                                                                                      | Staff                     |
| 2:55 | Entrepreneurial Signature Program<br>Dayton ESP                                                                                     | Staff                     |
| 3:50 | Other Business                                                                                                                      | All                       |
| 4:00 | Adjourn                                                                                                                             |                           |

# ***Industrial Research and Development Center Program***

**Fiscal Year 2012**

# Goals and Objectives

- Attract large, nationally designated and highly visible corporate, nonprofit, and federal R&D centers to Ohio by providing matching funds to enhance the potential for a center being located in Ohio
- Increase the reputation and visibility of Ohio within targeted industry areas
- Support centers which conduct value-added applied research at the direction of or in collaboration with Ohio industry, perform industry-directed and industry-oriented problem solving, and develop technologies that can be commercialized by or in partnership with an Ohio for-profit company

# Program Basics

- **Lead Applicants:** State-supported/assisted college or university or an Ohio nonprofit research organization that is competing for a federally funded R&D center to be in Ohio. Or a for-profit company planning to establish a corporate R&D center in Ohio.
- **Funding:** \$25 million (FY12); Award amount to be 15% of primary sponsor funding received to establish the Ohio center, with an Ohio Third Frontier award cap of \$5 million
- **FY12 IRDCP Awards:** Philips for \$5 million; Parker Hannifin for \$2.3 million; Michelman for \$2.5 million; Owens-Brockway for \$3 million (*pending*)
- **Previous RDCAP Awards:** GE Aviation; Wornick Foods; Timken; Philips; Wright State University/Air Force Research Lab
- **External Evaluator :** Taratec Corporation

# Additive Manufacturing Innovation Institute

- **Applicant:** Youngstown State University
- **Primary Sponsor:** Air Force Research Laboratory
- **Primary Sponsor commitment:** \$14,225,000
  - \$1.85 million in payroll
  - \$8.97 million in subcontracts/subgrants to Ohio partners
  - \$948,000 in purchased services and supplies
  - \$900,000 in machinery & equipment
- **IRDCP recommended:** \$2,133,750
  - Laser-based e-Manufacturing System, \$691,000; Polymer-based 3D Production System, \$602,160; Laser-based Metal Deposition System, \$898,285
- **Job Commitment:** 500 jobs over 5 years, avg. salary \$50,000
- **OTF alignment:** Advanced Materials & Sensing and Automation

# Additive Manufacturing Innovation Institute

## Purpose of the Center

To accelerate innovation in industrially relevant manufacturing technologies, provide shared assets to help companies, particularly small manufacturers, access cutting-edge capabilities/equipment, and educate/train students and workers in advanced manufacturing skills

- Put Ohio at the forefront of additive manufacturing core competencies;
- Increase Ohio's reputation as a national leader in manufacturing innovation;
- Generate impacts that reach the factory floor quickly through introduction of new products/processes;
- Leverage Ohio's academic strengths in advanced materials and sensing:
  - University of Akron, National Polymer Innovation Center
  - LCCC, SMART Commercialization Center for Microsystems
  - CWRU, Swagelok Center for Surface Analysis of Materials

# Additive Manufacturing Innovation Institute

## *Commitment Recommendation*

Industrial Research and Development Center Program commitment of \$2,133,750 to Youngstown State University to support YSU's costs for equipment to be housed at the National Additive Manufacturing Innovation Institute. Funding is contingent upon the federal government's award of the Pilot Institute of the National Network for Manufacturing Innovation, the federal commitment of \$14,225,000 to the National Additive Manufacturing Innovation Institute in Ohio, as well as Youngstown State University's commitment to the creation of 500 new Ohio jobs.

# ***Technology Validation and Start-Up Fund***

**Fiscal Year 2012**

# Goals and Objectives

- Create greater economic growth in Ohio based on start-up companies that commercialize technologies developed by Ohio institutions of higher education and other Ohio not-for-profit research institutions
- Designed to support:
  - technologies developed at eligible Ohio research institutions that need to be validated/proven that will have the ability to support a start-up company
  - Ohio start-up and young companies that license these validated/proven technologies from these Ohio institutions

# Program Basics

- ***Lead Applicants:***

**Phase 1** – Ohio higher education institutions or other Ohio not-for-profit research institutions with selection by the institution's Technology Transfer Office

**Phase 2** – Ohio start-ups and young, emerging Ohio companies that will execute an exclusive license with one of these institutions

- ***Funding:*** \$6 million (FY12); Nearly \$950,000 awarded in Cycle 1
- ***External Evaluator*** = YourEncore



*Innovative Results through Proven Expertise*

# Technology Validation and Start Up Fund- Round 2

10925 Reed Hartman Hwy., Suite 114  
Cincinnati, OH 45242  
[www.yourencore.com](http://www.yourencore.com)

P: 513.794.9777  
F: 513.794.9781

# Overview

- Improvement in recommendation rate for Round 2 at 52%, versus 35% in Round 1
  - *Several applications from Round 1 were improved and re-submitted in Round 2*
- Total grant dollars recommended was similar between this round and last: \$900,000 for Round 2, vs. \$950,000 for Round 1
  - *Fewer applications received this round*
- Technical elements of proposals were generally very strong
- Opportunity for improvements in business rationale
  - *Independent Review to ensure proof is meaningful and validated*
  - *Business Cases are in need of guidance and review prior to submission*

# Phase I - Summary of Recommendations

PROPOSAL #	Licensing Institution	PROJECT TITLE	Generation of Proof to be Licensed	Project Plan / Team	Independent 3rd Party Review (not "fatal")	Reasonable Path to Mkt	IP Protection	Start-up in Ohio	Market Opportunity / Size	Budget Narrative / Use of Funds
12-451	Case Western School of Medicine	Microparticles to Prevent Infection in Wound Healing								
12-452	Cincinnati Children's Hospital Medical Center	Suicide Risk Index (SRI)								
12-453	Cincinnati Children's Hospital Medical Center	N of 1								
12-454	Cincinnati Children's Hospital Medical Center	Neonatal Intensive Care Unit Magnetic Resonance Imaging (NICU MRI)								
12-455	Cleveland Clinic	Smart Treatment of ADHD								
12-456	Kent State University	Bistable Switchable Liquid Crystal Window								
12-457	Miami University	Device to Diminish Hypersensitive Gag Reflex Response								
12-458	Ohio State University	Electromagnetic Probe for Real-Time Identification of Surgical Margins during Removal of Solid Malignancies								
12-459	Ohio State University	Self-Administered Gerocognitive Examination (SAGE) Apple iPad application analysis and reporting engine								
12-460	Ohio State University	Third-party Payor Reimbursement Maximization Platform								
12-461	Ohio University	Advanced Catalytic Material and Supercritical Reactor for Cost Effective Treatment of Flowback/Produced Waters from Unconventional Shale Gas Wells								
12-462	University of Akron	Robust Sensors to Detect Toxic Compounds in Water								
12-463	University of Akron	Polymer Solar Cells with a Low Temperature-Annealed Sol-Gel-Derived MoO <sub>3</sub> Film as a Hole Transport Layer								
12-464	University of Akron	A Highly Selective Pyrophosphate Sensor for Biological Applications								
12-465	University of Cincinnati	Development of a New Use for an Old Drug; Probenecid for Heart Failure								
12-466	University of Toledo	Injectable Bone Cement								
12-467	University of Toledo	Facet Screw System								

# Phase 1 Recommendations - \$50,000 each

- 12-452: Suicide Risk Index, Cincinnati Children's Hospital Medical Center
- 12-454: Neonatal Intensive Care Unit Magnetic Resonance Imaging, Cincinnati Children's Hospital Medical Center
- 12-455: Smart Treatment of ADHD, Cleveland Clinic
- 12-458: Electromagnetic Probe for Real-Time Identification of Surgical Margins during Removal of Solid Malignancies, Ohio State University
- 12-459: Self-Administered Gerocognitive Examination (SAGE) Apple iPad Application Analysis and Reporting Engine, Ohio State University
- 12-461: Advanced Catalytic Material and Supercritical Reactor for Cost Effective Treatment of Flowback/Produced Waters, Ohio University
- 12-464: A Highly Selective Pyrophosphate Sensor for Biological Applications, University of Akron
- 12-466: Injectable Bone Cement, University of Toledo

# Phase II - Summary of Recommendations

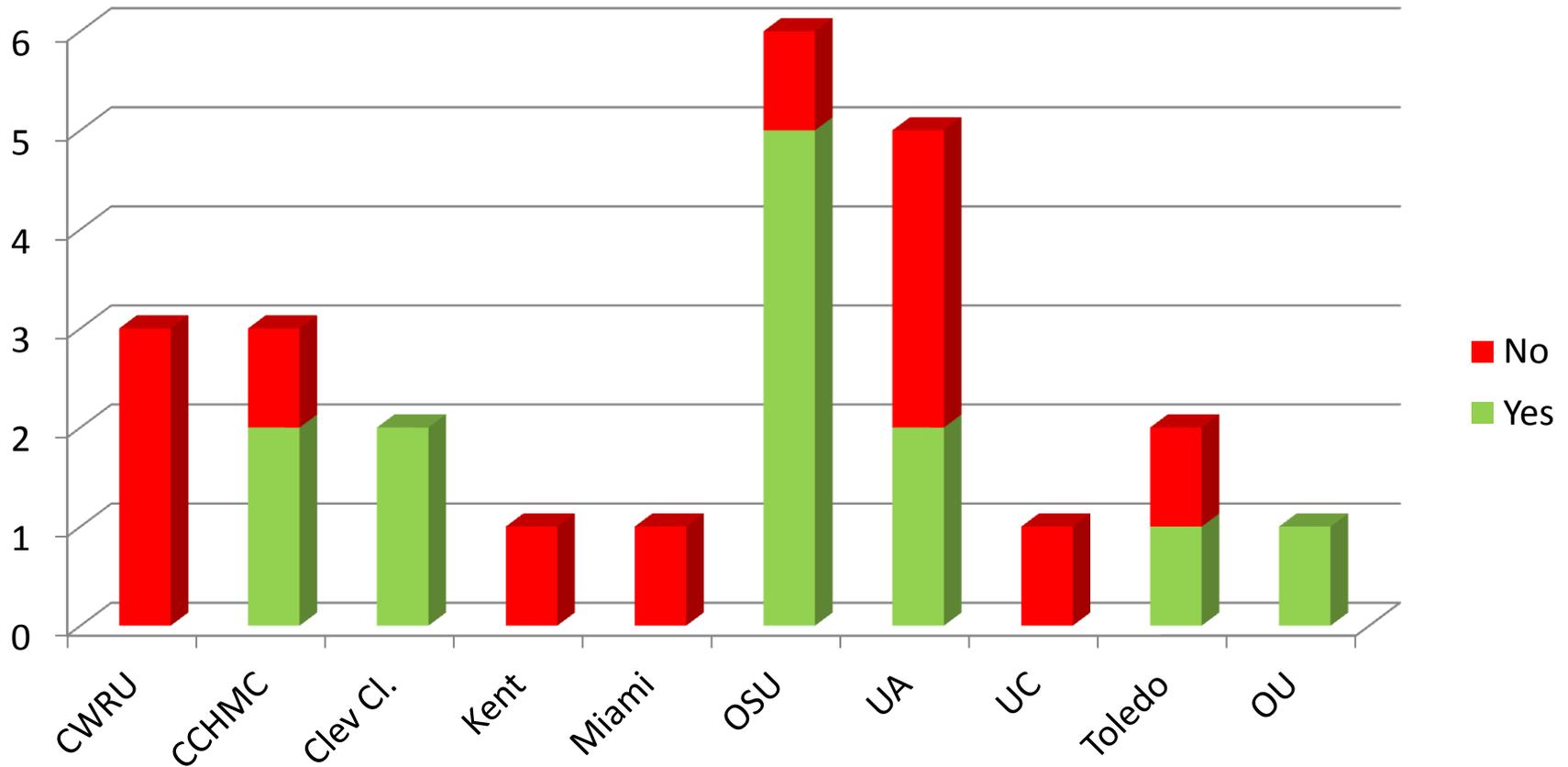
PROPOSAL #	Licensing Institution	PROJECT TITLE	Proof to Raise Additional Funds	Project Plan (one year)	Likelihood of Additional Funds at project end	Team	Business Model	Company Backing	IP Protection	Oppty./ Mkt. Size	Budget / Use of Funds	Start-up in Ohio	License with Ohio Institution
12-471	Ohio State University	Next Generation Illuminators for Imaging and Detection Applications											
12-472	Ohio State University	Advanced Language Performance Portfolio System (ALPPS)											
12-473	Ohio State University	Marine Jet Propulsion System											
12-474	University of Akron	New Low Cost, Small Diameter NGJ Carbon Fibers from NGJ, LLC											
12-475	University of Akron	Parallel Computation of the Fast Fourier Transform											
12-476	Case Western Reserve University	Development of Novel Tools for Health IT - COBALT											
12-477	Case Western Reserve University	Microparticles to Prevent Infection in Hernia Mesh Repair											
12-478	Cleveland Clinic	Portable Concussion Assessment											

## Phase 2 Recommendations - \$100,000 each

- 12-471: Next Generation Illuminators for Imaging and Detection Applications, Core Quantum Technologies/Ohio State University
- 12-472: Advanced Language Performance Portfolio System, ALPPS/Ohio State University
- 12:473: Marine Jet Propulsion System, CGC Ultramarine/Ohio State University
- 12-474: New Low Cost, Small Fiber NGJ Carbon Fibers, NGJ/University of Akron
- 12-478: Portable Concussion Assessment, I-Comet/Cleveland Clinic

# Combined Approved/Rejected by Institution

Combined Approved/Rejected by Institution





Visit our website at: [www.youencore.com](http://www.youencore.com)

# ***Entrepreneurial Signature Program***

**Fiscal Year 2012**

# 6-Month Bridge Funding Award

Organization	6-Month Bridge Funding
CincyTech	\$1,406,869
Dayton ESP	\$ 616,700
JumpStart	\$5,470,514
Rocket Ventures	\$ 150,000
TechColumbus	\$1,485,869
TechGrowth	\$ 200,000
<b>OTF Total</b>	<b>\$9,329,952</b>

# Program Basics

Organization	Continuity	Continuity Plus	New	Total 2013-2014
CincyTech	\$2,605,510	\$1,569,490	\$1,325,000	\$5,500,000
Dayton ESP	\$2,085,055	\$841,745	\$1,073,202	\$4,000,000
JumpStart	\$10,379,856	\$3,499,290	\$6,701,897	\$20,581,043
Rocket Ventures	\$1,500,000	\$195,000	\$ 0	\$1,695,000
TechColumbus	\$5,786,414	\$1,093,727	\$1,525,210	\$8,405,351
TechGrowth	\$ 2,474,399	\$490,520	\$35,081	\$3,000,000
<b>OTF Total</b>	<b>\$24,831,234</b>	<b>\$7,689,772</b>	<b>\$10,660,390</b>	<b>\$43,181,396</b>

# Funding Awarded FY2012 + FY2013/14

Organization	Total Funding
CincyTech	\$6,906,869
Dayton ESP	\$4,616,700
JumpStart	\$26,051,557
Rocket Ventures	\$1,845,000
TechColumbus	\$9,891,220
TechGrowth	\$3,200,000
<b>OTF Total</b>	<b>\$52,511,346</b>

# ***Entrepreneurial Signature Program***

## **CincyTech**

# Southwest Ohio Entrepreneurial Signature Program

Aug. 23, 2012

*Presentation to Third Frontier Commission*

# Presentation Topics

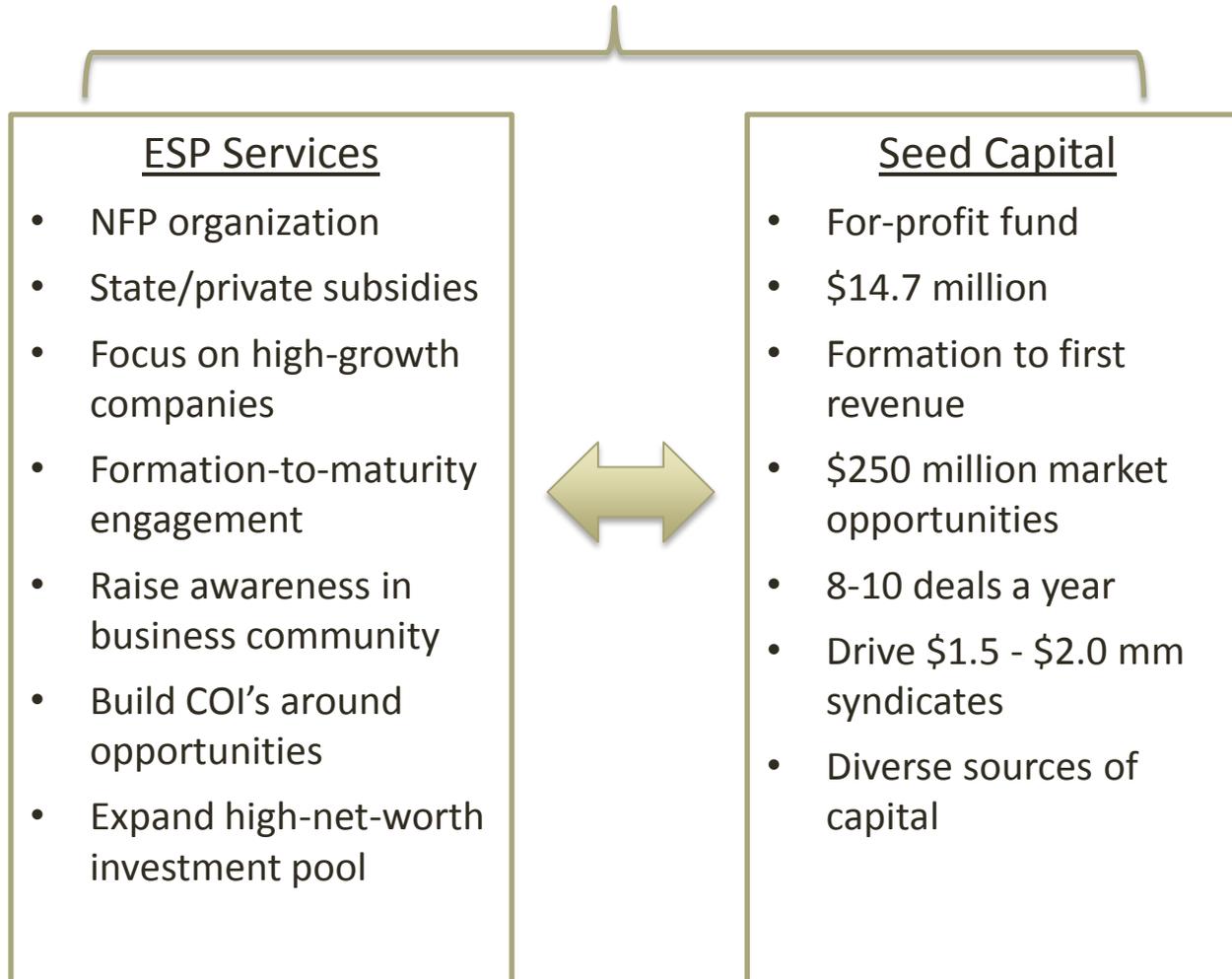
- I. Value Proposition
- II. Results
- III. New Initiatives
- IV. Community Perspective

## Southwest Ohio vs. Mature Ecosystem, 2007

Area	Mature	SWO
Entrepreneurial Bench	2 <sup>nd</sup> , 3 <sup>rd</sup> generation	Few, not well known
Angel/Seed Capital	Diverse sources, groups with success	One organized group w/ limited capacity
Venture Capital	Resident funds in all stages, others looking in	Resident funds fading out, one later stage fund
Research Commercialization	Institutions experienced and active in commercialization process	Research institutions getting started
Transactional Sophistication	Terms, cycle, structures of start-up investment well known	Limited knowledge among investors, lawyers and entrepreneurs
Culture	COI's naturally form around companies	New companies struggle for access, talent, funding

# Seed+ Investment/Ecosystem

## Current Model



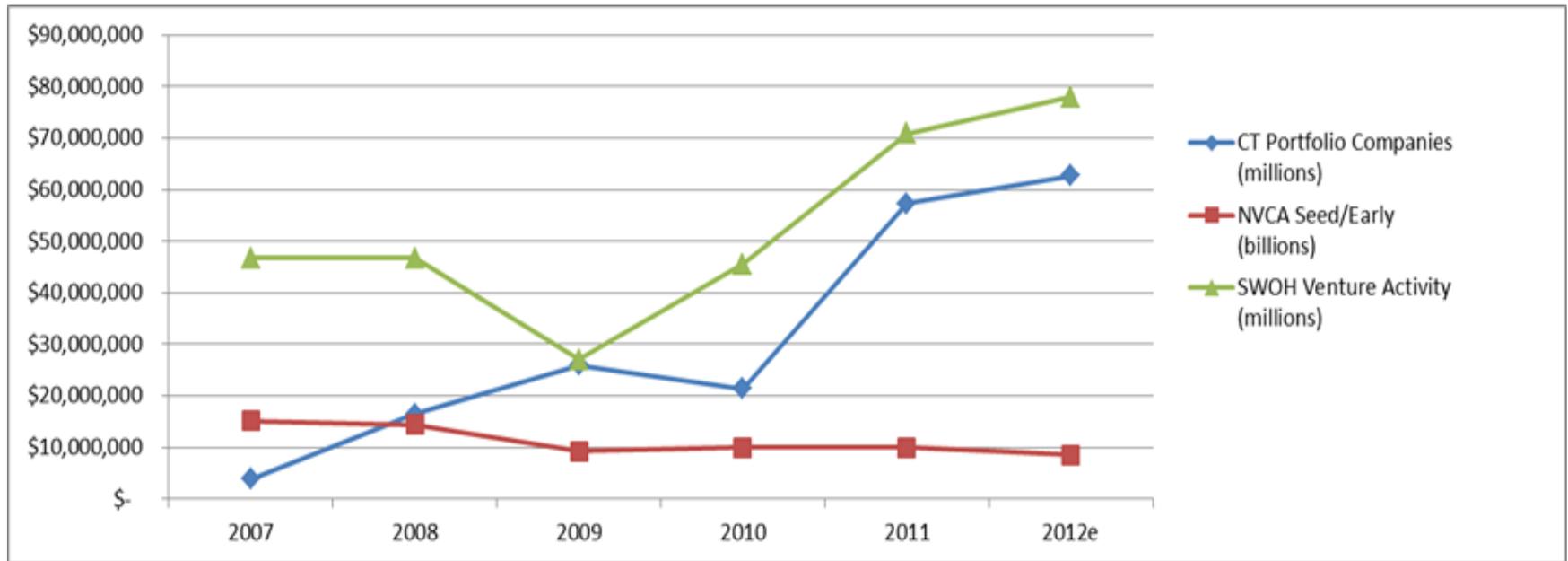
# Services by Stage

Origination	Improvement Services	Investment Readiness	Post Investment
<ul style="list-style-type: none"> <li>• Evaluation support for research institutions</li> <li>• Grants for accelerators</li> <li>• Collaborator Grants (HCBC, Brandery, Cintrifuse)</li> <li>• Opportunity evaluation for private investors</li> <li>• Community-awareness building</li> <li>• Law firm outreach</li> </ul>	<ul style="list-style-type: none"> <li>• Product/market validation</li> <li>• IP assessment</li> <li>• Team/advisor gap analysis</li> <li>• Development plan milestones</li> <li>• Business model analysis</li> <li>• Founder development &amp; education</li> <li>• Financial plan for fund raising</li> <li>• Talent/board recruitment</li> </ul>	<ul style="list-style-type: none"> <li>• Negotiation of terms</li> <li>• Legal and technical due diligence</li> <li>• Legal and financial closing of first investment</li> <li>• Syndicate development</li> </ul>	<ul style="list-style-type: none"> <li>• Customer/partner introduction</li> <li>• Governance and board matters</li> <li>• Growth/expansion planning</li> <li>• Managing follow-on seed rounds</li> <li>• Venture financing planning and introductions</li> <li>• Investor syndicate management</li> <li>• Acquisition/exit strategy/planning</li> </ul>

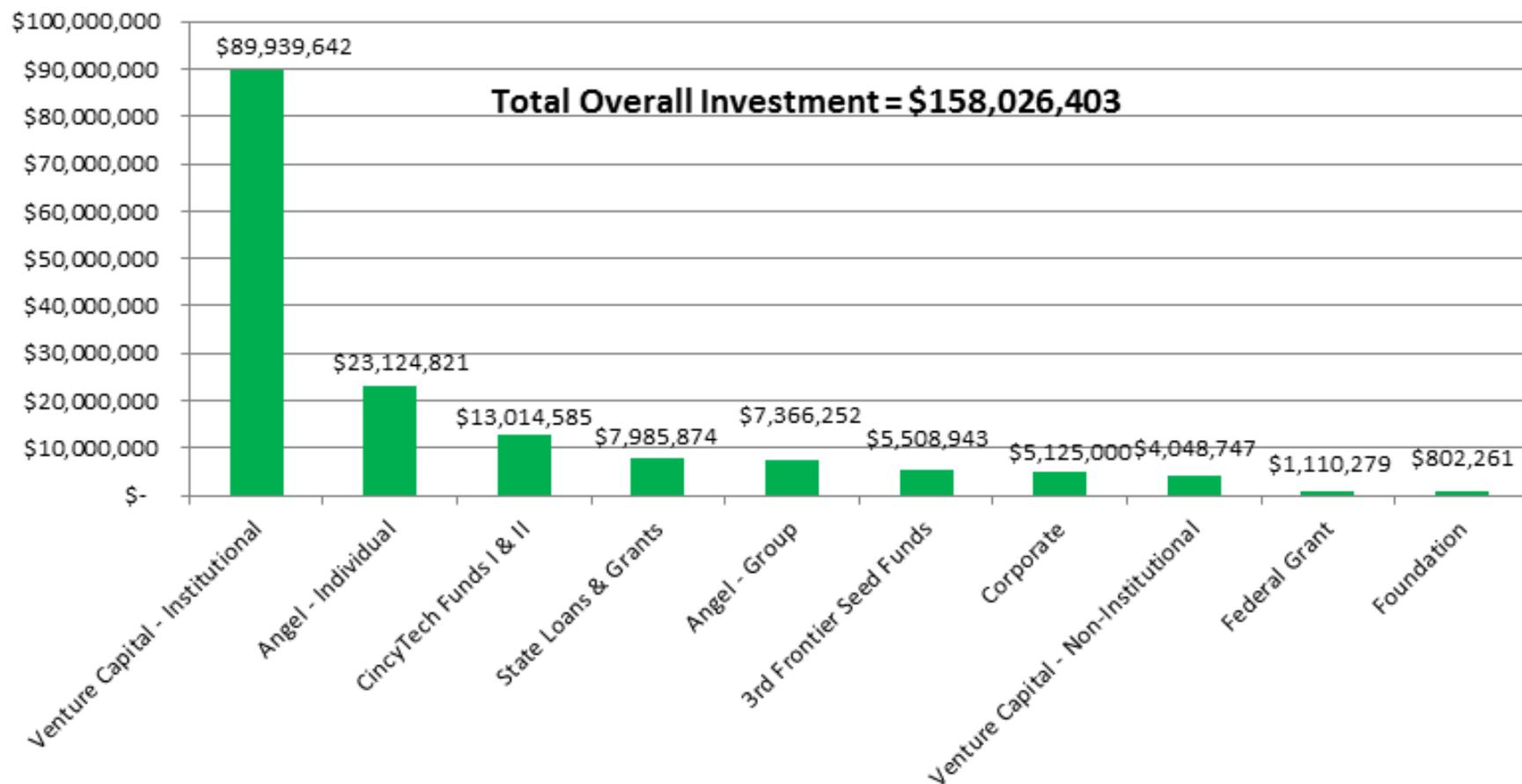
# Performance Report

Category	2007-3/2012	FY2012-2014	Cumulative
Inquiries	3,076	1,600	4,676
Qualified Deal Flow	906	400	1,406
Client Companies	160	80	240
Investments	40	15	45
Investments Originated/led	29	13	42
Active Portfolio Companies	36	15	51
Venture-backed Companies	5	5	10
Research Institution Spinouts	6	5	11
Relocations to Southwest Ohio	4	2	6
Jobs Created	338.5	300	638
Average Wage	\$84,000	\$75,000	\$75,000
Exits	1	2	3
CincyTech Fund Investments	\$13,014,595	\$6,000,000	\$19,014,585
Co-investment	\$145,011,818	\$100,000,000	\$245,011,818
Revenue	\$28,944,818	\$100,000,000	\$128,944,458
Total Investment Returns	\$38,221,538	\$200,000,000	\$238,221,538
Total Investment and Revenue	\$225,192,399	\$406,000,000	\$631,192,399

# Southwest Ohio Compared to National Venture Capital Trends



# CincyTech Investment by Source



# Continuation Services Gaps/Proposal

GAPS	PROPOSAL
Better organized process for communicating and managing investors	Full-time investor-development position
Greater deal flow, service needs still exist	1 new IT analyst, one health-care IT analyst
Talent—150 technical/scientific, 50 managerial/functional openings	Full-time recruiter and assistant for direct placement
CincyTech admin support	1 executive assistant/1 mkt assistant

# Collaborator/Ecosystem Gaps/Proposal

GAPS	Proposal
Mentoring, pillar company engagement, early-stage capital, marketing	Creation of Cintrifuse to serve more companies and manage a \$50mm to \$70mm fund of funds
U.C. commercialization needs boost	Pilot U.C. accelerator
Brandery now requires full-time support	Full-time managing director

# ***Entrepreneurial Signature Program***

## **Dayton ESP**

# Dayton Region ESP

8/23/2012

# Dayton Region ESP Summary

- Integrated Element of Regional Economic Development
  - Focus on Cluster Building
  - Focus on Regional Core Competencies and Opportunities
    - Job Creation
    - “Sticky” company formation
    - Entry Points for Retention , Expansion and Attraction
  - ESP not separately branded
- Fiscal Efficiency Requirement
  - Low Staffing and Overhead leaving funding for Company Needs
  - Leverage Existing Resources
  - Quality rather than Quantity
- Ecosystem Change Agent
  - Cause WPAFB, university research institutions to collaborate
  - Pair IP generators with appropriate entrepreneurial service providers
  - Transition R&D culture to Entrepreneurial Innovation culture and increase financial literacy
- Proud of Results
  - Attracted Follow-on Investment from over 15 global customers including Federal government creating opportunities even outside ESP
  - High percentage of Level A Metrics are Revenues (over 60%)
  - Created over 400 Jobs

# Dayton Region ESP 1.0 Summary

- **Integrated Element of Regional Economic Development**
  - Focus on Cluster Building
  - Focus on Regional Core Competencies and Opportunities
  - ESP not separately branded
- **Fiscal Efficiency Requirement**
  - Low Staffing and Overhead leaving funding for Company Needs
  - Leverage Existing Resources
  - Quality rather than Quantity
- **Ecosystem Change Agent**
  - Increased WPAFB and university research institutions collaboration
  - Paired IP generators with appropriate entrepreneurial service providers
  - Transition R&D culture to entrepreneurial Innovation culture and increase financial literacy
- **Outcomes and Results**
  - Attracted Follow-on Investment from over 15 global customers including Federal government creating opportunities even outside ESP
  - High percentage of Level A Metrics are Revenues (over 60%)
  - Created over 400 Jobs

# Integrated Ecosystem

- The Dayton Region has developed an integrated ecosystem for economic development
  - Networked partners ensure efficient operations
  - Existing capabilities provide an opportunity to leverage assets, while making smart investments
  - The approach is fundamentally changing the way the region does business

## Integrated Economic Development

Regional Economic Development

Dayton Region ESP

Cluster Building

Regional Core Competencies

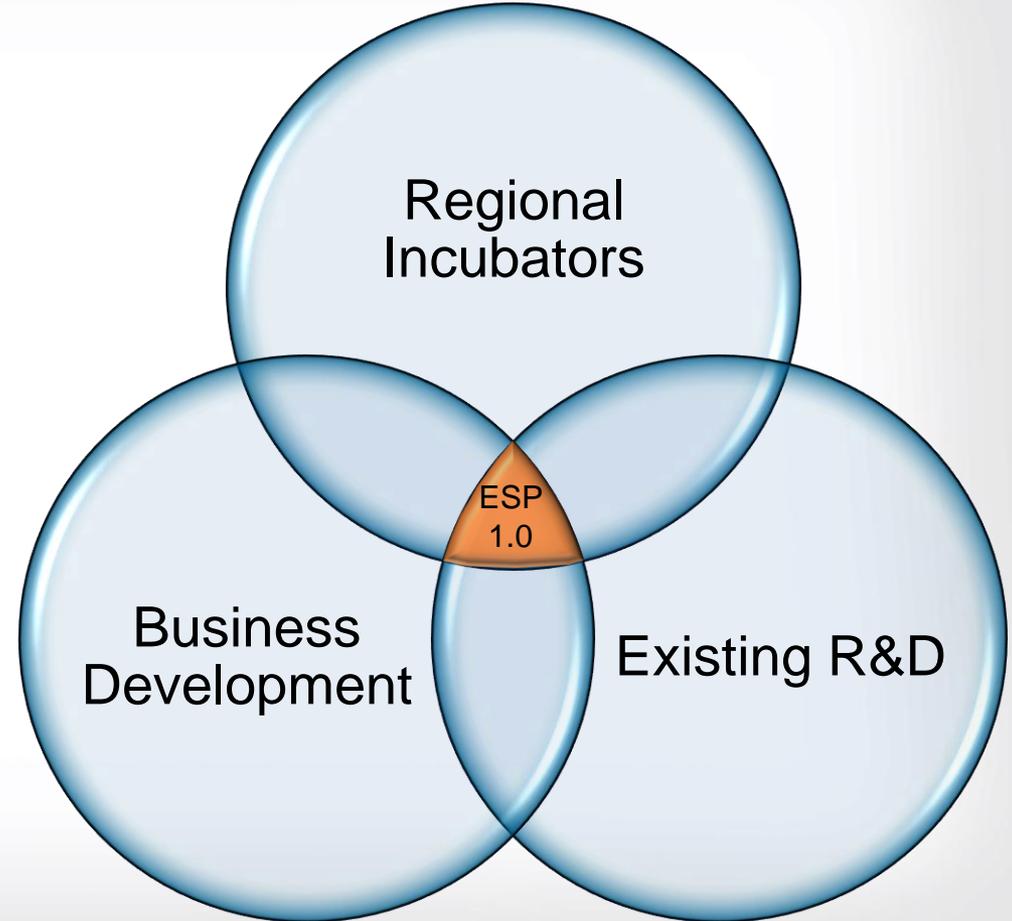
Job Creation

Sticky Companies

Business Attraction, Retention & Expansion

# Fiscally Efficient

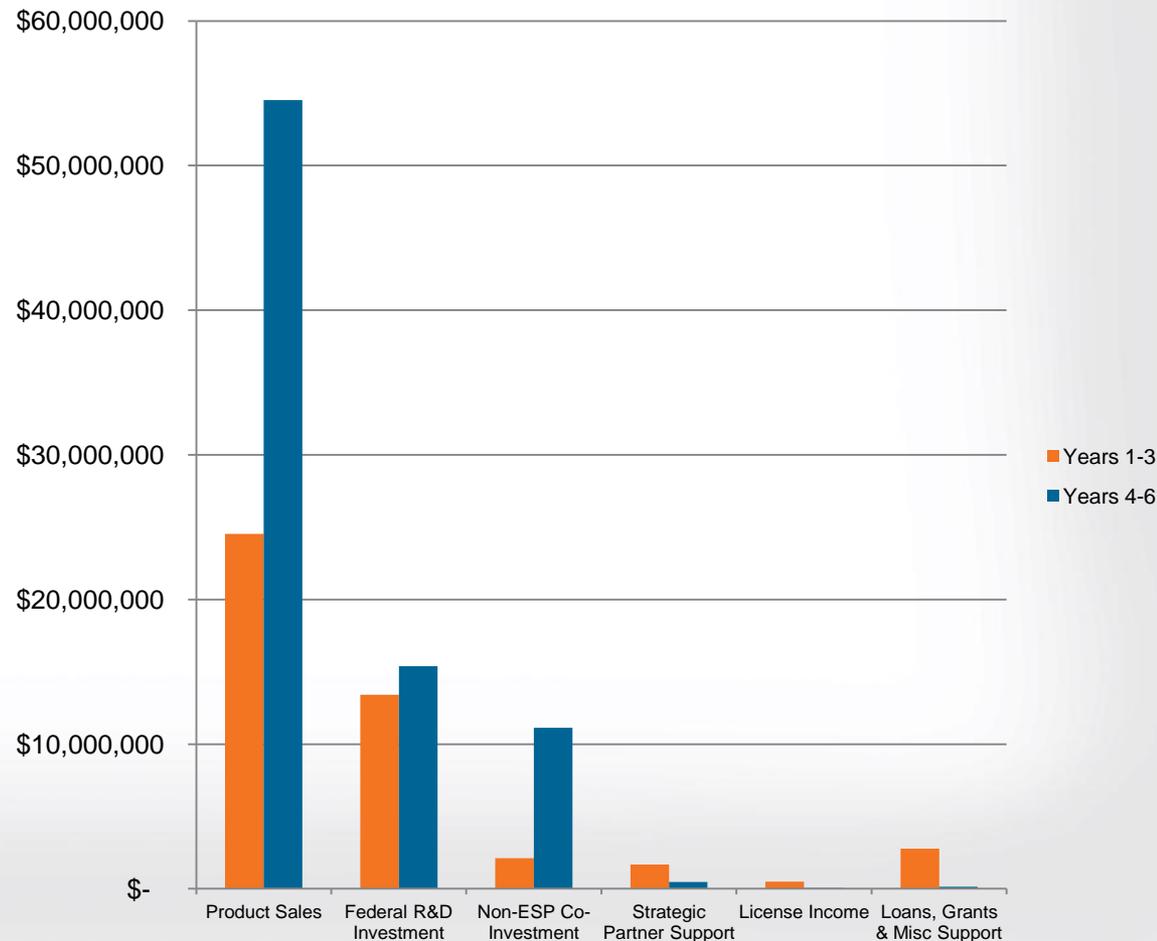
- Investors directed the program to limit overhead
  - Low overhead and leveraging existing initiatives would increase investment opportunities
  - ESP 1.0 leveraged expertise and existing resources to identify opportunities streamline deal flow
  - Developed a network of partners
  - Targeted quality companies with long term, regional impact



# Ecosystem Change Agent

- Outcomes have demonstrated a shift in company growth
  - Product sales and non-ESP co-investment have grown over the length of the program
  - The ecosystem has paired WP with Universities
  - The ecosystem also paired IP generators with business development
  - The culture is slowly changing from R&D focused to commercialization

A Metrics by Type



# Entrepreneurial Performance

- Job Growth

	Direct Jobs	Indirect Jobs	Induced Jobs	Total Jobs
Created/Retained Jobs	403	166	246	815
3 Year Projection	1,798	500	1,082	3,380
Total Jobs	2,201	666	1,329	4,195

Direct Jobs = created or retained by ESP companies

Indirect Jobs = created in the supply chain

Induced Jobs = created as a result of increased consumer spending

- A Metrics include major corporate investments



# Other Business

## Next Third Frontier Commission Meeting

**September 19, 2012**