

Ohio

Third Frontier

Innovation Creating Opportunity

Commission Meeting

June 12, 2013

4656803245
45670982346
68092385603
68230848564
80692380458
56234685604
06485069236
02394530495
56823845068
62308485069
04526803456
34685096804
56234562343
23656742364
85748742848
wchtdoajpsjny
jsholp qsn
ghidska (9) (0TY)

hvjgdhwojvjq
Cv sh
mv474
44b
AWC(a)
1047767
5345344

1004770040100
4410 -432040
0064 463 550
6644541414443
064444333
12785
450.42.1327007
voisdjvwudvassd

Agenda

- | | | |
|--------------|--------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|
| 10:00 | Call to Order
Approve 04/10/2013 Meeting Minutes | David Goodman (Chair) |
| 10:05 | Entrepreneurial Assistance Programs – Update | Mihaela Jekic |
| 10:10 | New Program RFPs – Update | Norm Chagnon |
| 10:15 | Portfolio Manager Introduction
Update on Battelle Analyses | Keith Jenkins |
| 10:30 | Award Decisions
Technology Validation and Start-Up Fund
Innovation Platform Program
Third Frontier Internship Program | YourEncore
National Academies
Invantage Group |
| 11:55 | Open Innovation Incentive Program
Guest Presentations | Mihaela Jekic
yet2.com; NineSigma; Oatey |
| 12:20 | Other Business | |
| 12:30 | Adjourn | |

Entrepreneurial Assistance Programs

Entrepreneurial Signature Program Update

Rocket Ventures



dayton development coalition

GROWING THE DAYTON REGION



Incubation Program Update

- Recap from last Commission meeting
- Concept
 - Open, competitive RFP with external merit review
 - Blend of operating expenses and direct funding for most promising companies
- Follow up
- Proposed direction

New Programs Request for Proposals

New Programs – Request for Proposals

- Commercial Acceleration Loan fund
- Technology Asset Grants
- Technology Commercialization Centers

Portfolio Manager – Keith Jenkins

Battelle Analyses

Biography

- 8 years at Battelle
 - Market and competitive research, technology evaluation, business case development, due diligence
 - Degrees from Northwestern and Ohio State
- Third Frontier metrics
 - New approach based on Metrics Framework
 - Overall and individual projects / programs
 - Need to tell a better story

Battelle Analyses

- Updated assessment of original 8 growth opportunity areas
 - Market update for 5 areas
 - Advanced materials, aero-propulsion power management, medical technology, sensing/automation systems, and situational awareness/surveillance systems
 - More detailed market trends and Ohio position profile for 3 areas
 - Fuel cells and energy storage, software applications (data analytics, health IT, etc.) and solar photovoltaics
- Detailed assessment of new opportunities
 - Unconventional oil & gas (shale) and agbiosciences
 - Soliciting input from JobsOhio for additional areas to be considered
- Updated OTF Analysis of Performance (OBR 2009)

Technology Validation and Start-Up Fund

Purpose

- Create 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 and will have the ability to support a start-up company
 - Ohio start-up and young companies that license these validated/proven technologies from 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. Awards of up to \$50,000.

Phase 2 – Ohio start-ups and young, emerging Ohio companies that will execute an exclusive license with one of these institutions. Awards of up to \$100,000.

- ***Funding:*** \$6 million
- ***External Evaluator:*** YourEncore



Innovative Results through Proven Expertise

Technology Validation and Start Up Fund-Round 4

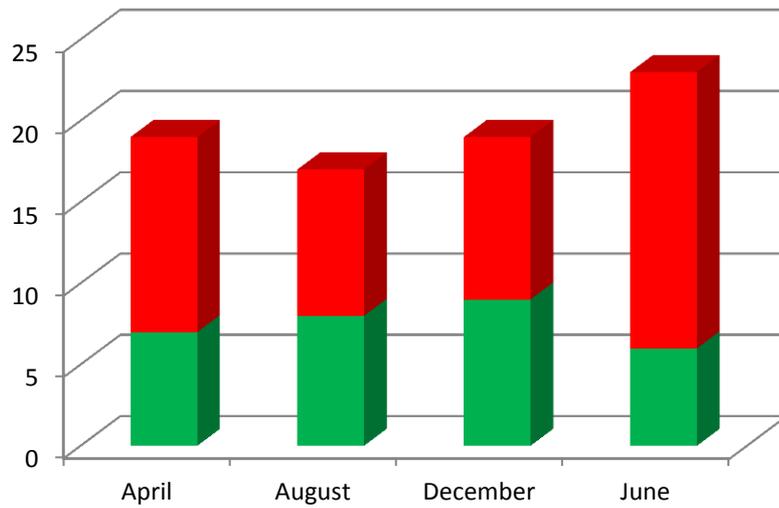
4350 Glendale-Milford Rd., Suite 110
Cincinnati, OH 45242
www.yourencore.com

P: 513.794.9777
F: 513.794.9781

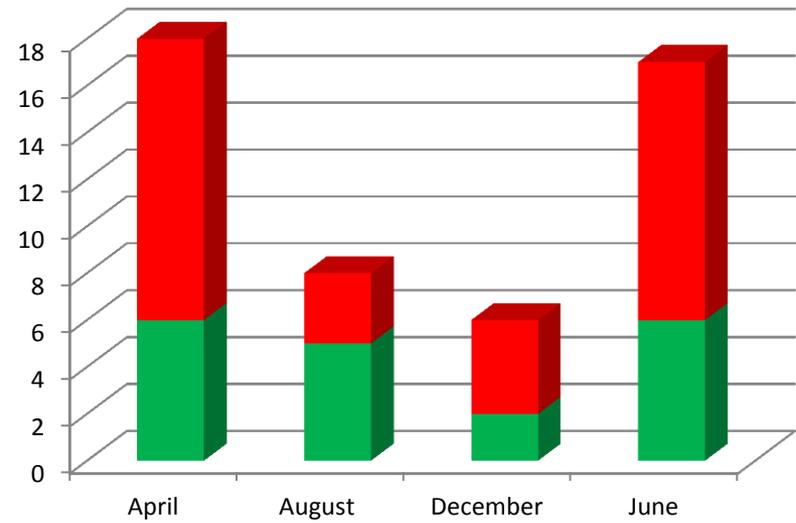
Overview

- Total grant dollars recommended increased to \$863,636 vs. Round 3
 - \$950,000 in Round 1, \$900,000 in Round 2, \$610,000 in Round 3
 - Round 4 increase driven by greater number of applications vs. Round 3

Phase 1 Applications



Phase 2 Applications



Overview

- 30% of grants submitted this round recommended for approval (12 of 40)
 - *35% recommended in Round 1, 52% in Round 2, 44% in Round 3*
- Quality of proposal writing decreased from previous rounds, likely needing greater involvement from university TTO's
- Proposals continued to be strong technically
- Opportunity for improvements in business rationale
 - *Business Cases are in need of guidance and review prior to submission*
 - *Lacking clear understanding of potential market dynamics and size*
- Strongly encourage potential resubmissions to take advantage of the opportunity to debrief

Phase I

Summary of Recommendations

PROPOSAL #	Licensing Institution	PROJECT TITLE	Generation of Proof to be Licensed	Project Plan / Team	Independent 3rd Party Review	Reasonable Path to Mkt	IP Protection	Start-up in Ohio	Market Opportunity / Size	Budget Narrative / Use of Funds
13-0402	Kent State	<i>Easily Reconfigurable, High Resolution, Patterned Liquid Crystal Alignment Layers via Ink Jet printing</i>	Green	Yellow	Green	Green	Green	Green	Green	Yellow
13-0407	University of Toledo	<i>Nano-biosensor for Infection in Tissue</i>	Green	Yellow	Green	Green	Green	Yellow	Green	Yellow
13-0410	University of Toledo	<i>Non-toxic Antibacterial Surfactant/ Microgel Formulations</i>	Green	Green	Green	Yellow	Green	Yellow	Yellow	Yellow
13-0413	Case Western	<i>Image-Based Risk Score for Predicting Response to Therapy for ER & Breast Cancer Patients</i>	Green	Yellow	Green	Yellow	Green	Green	Green	Green
13-0416	Austen BioInnovation Institute	<i>Ultra Low Volume Syringe/Pipette</i>	Green	Green	Yellow	Green	Green	Green	Green	Green
13-0420	Kent State	<i>Fast Electrooptic Switches Based on Liquid Crystals</i>	Green	Green	Green	Yellow	Yellow	Green	Yellow	Yellow
13-0401	Ohio University	<i>A Matlab Toolkit for 3D Visualization of Real and Synthetic Flight Data</i>	Yellow	Green	Green	Green	Green	Yellow	Red	Green
13-0403	Kent State	<i>Smart Energy Saving Liquid Crystal Window</i>	Red	Yellow	Red	Red	Green	Yellow	Green	Yellow
13-0404	Ohio State	<i>VisonLight</i>	Yellow	Red	Yellow	Yellow	Red	Green	Yellow	Green
13-0405	Ohio State	<i>Inorganic Membranes for Freshwater Recovery</i>	Red	Yellow	Green	Red	Green	Green	Red	Green

Phase I

Summary of Recommendations

PROPOSAL #	Licensing Institution	PROJECT TITLE	Generation of Proof to be Licensed	Project Plan / Team	Independent 3rd Party Review	Reasonable Path to Mkt	IP Protection	Start-up in Ohio	Market Opportunity / Size	Budget Narrative / Use of Funds
13-0406	Ohio State	Personalized Spine Assessment	Red	Yellow	Red	Yellow	Red	Green	Green	Green
13-0408	University of Toledo	Bio-polyamides precursors for production of Nylon 11	Red	Yellow	Green	Green	Green	Red	Green	Green
13-0409	University of Toledo	Nanoelectronic Memristor Device	Yellow	Yellow	Green	Red	Green	Yellow	Red	Yellow
13-0411	University of Toledo	Injectgraft	Red	Green	Green	Yellow	Yellow	Green	Yellow	Yellow
13-0412	Ohio State	Total Animal	Green	Green	Green	Green	Green	Green	Red	Red
13-0414	Cleveland Clinic	Reinforced Extracellular Matrix Device for Ventral Hernia Repair	Red	Red	Green	Yellow	Yellow	Green	Green	Yellow
13-0415	University of Akron	Low-Cost Integrated Wireless Sensor Network for Agriculture Hydroponic Systems	Green	Green	Red	Red	Green	Green	Red	Yellow
13-0417	Austen BioInnovation Institute	Self-Retaining Radiolucent Femoral Retractor	Yellow	Green	Yellow	Green	Green	Red	Red	Green
13-0418	Austen BioInnovation Institute	Intubation Mouth Guard	Green	Green	Yellow	Yellow	Yellow	Red	Red	Green
13-0419	Austen BioInnovation Institute	Digital Wound Assessment	Red	Yellow	Red	Yellow	Yellow	Green	Red	Green
13-0421	Kent State	Novel Non-Photobleaching Fluorescent Magnetic Nanoparticles as Advanced Bioimaging Agents	Red	Yellow	Green	Green	Yellow	Green	Green	Green
13-0422	Kent State	High Speed Plasmonic Spatial Light Modulators with Low Driving Voltages	Red	Green	Yellow	Red	Red	Yellow	Green	Green
13-0423	Kent State	Smart Responsive Scaffolds for 3D/4D Cell Culture and Regenerative Medicine Applications	Red	Yellow	Red	Red	Yellow	Green	Yellow	Green

Phase 1 Proposals Recommended for Funding

- 13-402: Kent State University, Easily Configurable, High Resolution, Patterned Liquid Crystal Alignment Layers via Ink-jet Printing of Metal Nanoparticles and Semiconductor Quantum Dots, \$46,527
- 13-407: The University of Toledo, Nano-biosensor for Infection in Tissue, \$25,000
- 13-410: The University of Toledo, Non-toxic Antibacterial Surfactant/Microgel Formulations, \$44,493
- 13-413: Case Western Reserve University, Image-based Risk Score for Predicting Response to Therapy for ER+ Breast Cancer Patients, \$50,000
- 13-416: Austen BioInnovation Institute in Akron, Ultra Low Volume Syringe/Pipette, \$49,250
- 13-420: Kent State University, Fast Electrooptic Switches Based on Liquid Crystals, \$50,000

Phase II

Summary of Recommendations

PROPOSAL #	Licensing Institution	Lead Applicant	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	Opportunity /Mkt. Size	Budget / Use of Funds	Start-up in Ohio	License with Ohio Institution
13-0427	Nationwide Children's Hospital	Nanofiber Solutions	Development of a Tissue Engineered Small Intestine											
13-0429	Case Western Reserve	Folio Photonics LLC	Prototype Development of a Coextruded Multilayer Polymer Film for Optical Data Storage											
13-0433	University of Toledo	Lucintech Inc	Transparent PV Window Prototypes											
13-0434	The Austen BioInnovation Institute in Akron	Apto Orthopaedics	A Non-Invasively Adjustable Implant for Treatment of Early Onset Scoliosis											
13-0436	Ohio State	LARAD	Virus-Like-Particle (VLP) Vaccines											
13-0437	University of Toledo	Analytic Diabetic Systems	Beta Prototype Development of a Comprehensive Web-Based Clinical Decision Support System Supporting Optimization of Glycemic Control in the Hospital/Critical Care Setting											

Phase II

Summary of Recommendations

PROPOSAL #	Licensing Institution	Lead Applicant	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	Opportunity / Mkt. Size	Budget / Use of Funds	Start-up in Ohio	License with Ohio Institution
13-0424	University of Dayton	ZaggerTag, LLC	ZaggerTag	Green	Green	Yellow	Green	Red	Red	Yellow	Yellow	Yellow	Green	Green
13-0426	Ohio State	Sensetronics, LLC	Commercialization of ImmunoFET Sensors	Red	Yellow	Green	Yellow	Green	Green	Green	Green	Red	Yellow	Green
13-0428	The Austen BioInnovation Institute in Akron/Summa Health Systems	GorMonjee Inc	GorMonjee The Decision Making Engine for Healthier Food Choices	Yellow	Yellow	Red	Yellow	Red	Green	Red	Red	Green	Green	Green
13-0430	Nationwide Children's Hospital	Abeona Therapeutics	Development of therapies for children with Sanfilippo disease	Green	Green	Green	Yellow	Red	Green	Yellow	Yellow	Red	Yellow	Green
13-0431	Ohio State	COPE2Thrive LLC	COPE Online	Green	Yellow	Yellow	Red	Red	Yellow	Red	Green	Yellow	Green	Green
13-0432	Ohio State	Simple-Fill LLC	Simple-Fill Natural Gas Compression	Green	Green	Green	Yellow	Red	Green	Green	Red	Red	Green	Green
13-0435	Ohio State	AEPCON	Electronic Bandages	Red	Green	Red	Yellow	Yellow	Yellow	Green	Green	Green	Green	Green
13-0438	Ohio State	Dowell Vargas Solutions	MedReviews	Green	Green	Green	Green	Red	Yellow	Red	Red	Green	Green	Green
13-0439	Ohio State	Readiness Analytics	The Readiness Test	Red	Green	Yellow	Green	Red	Yellow	Green	Red	Green	Green	Green
13-0440	University of Toledo	IRISense LLC	IRISense LLC	Green	Green	Green	Yellow	Red	Green	Green	Yellow	Green	Green	Yellow

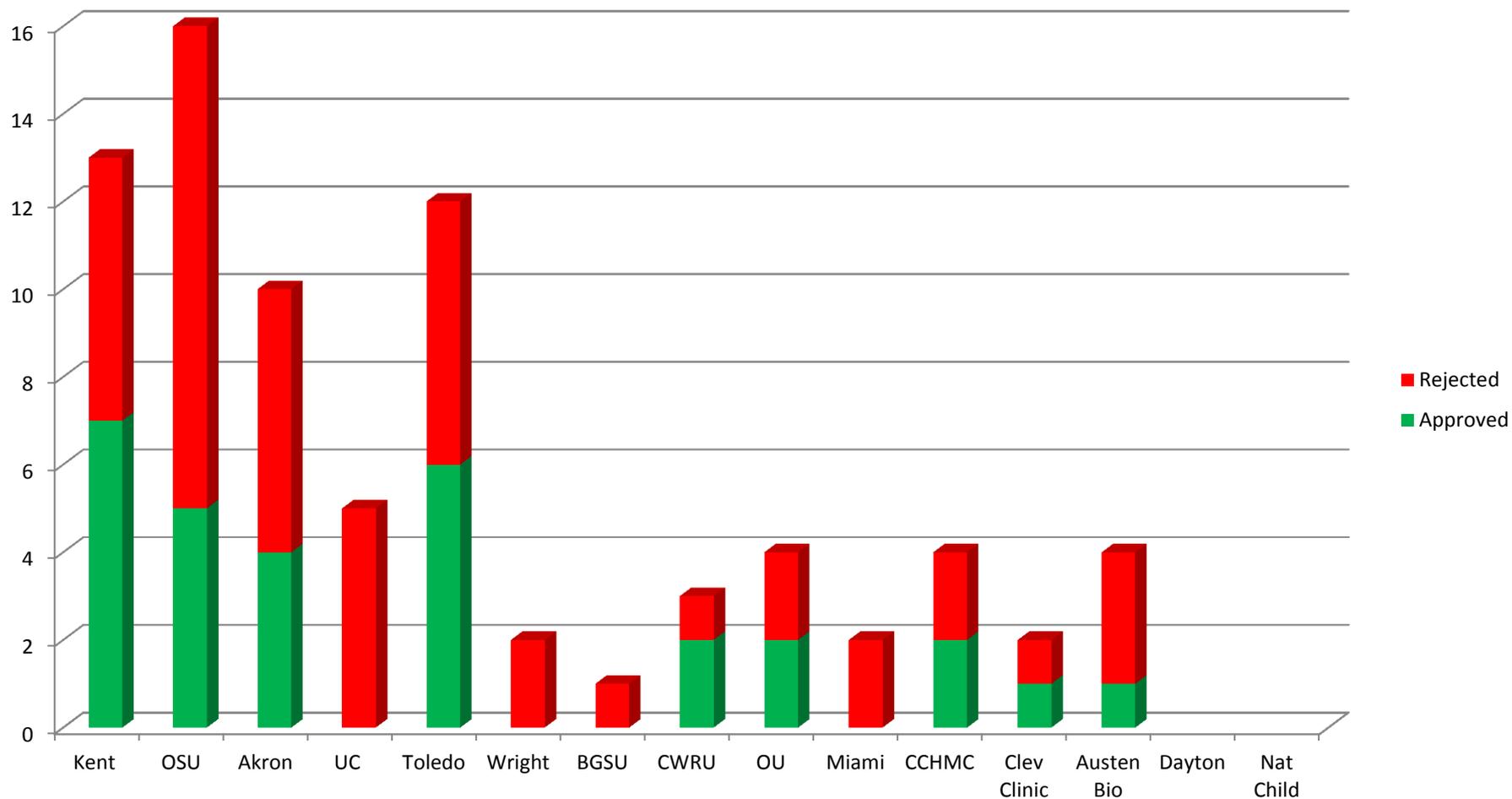
Phase 2 Recommendations for Funding

- 13-427: Nanofiber Solutions, Development of a Tissue Engineered Small Intestine, \$100,000
- 13-429: Folio Photonics, LLC, Prototype Development of a Coextruded Multilayer Polymer Film for Optical Data Storage, \$100,000
- 13-433: Lucintech Inc., Transparent PV Window Prototypes, \$100,000
- 13-434: Apto Orthopaedics, A Non-invasively Adjustable Implant for Treatment of Early Onset Scoliosis, \$100,000
- 13-436: LARAD, Inc., Virus-Like-Particle (VLP) Vaccines, \$100,000
- 13-437: Analytic Diabetic Systems, LLC, Beta Prototype Development of a Comprehensive Web-based Clinical Decision Support System (GlyCU) Supporting Optimization of Glycemic Control in the Hospital/Critical Care Setting, \$98,366

Combined Approved/Rejected by Institution

Phase 1 Cumulative Through 4 Rounds

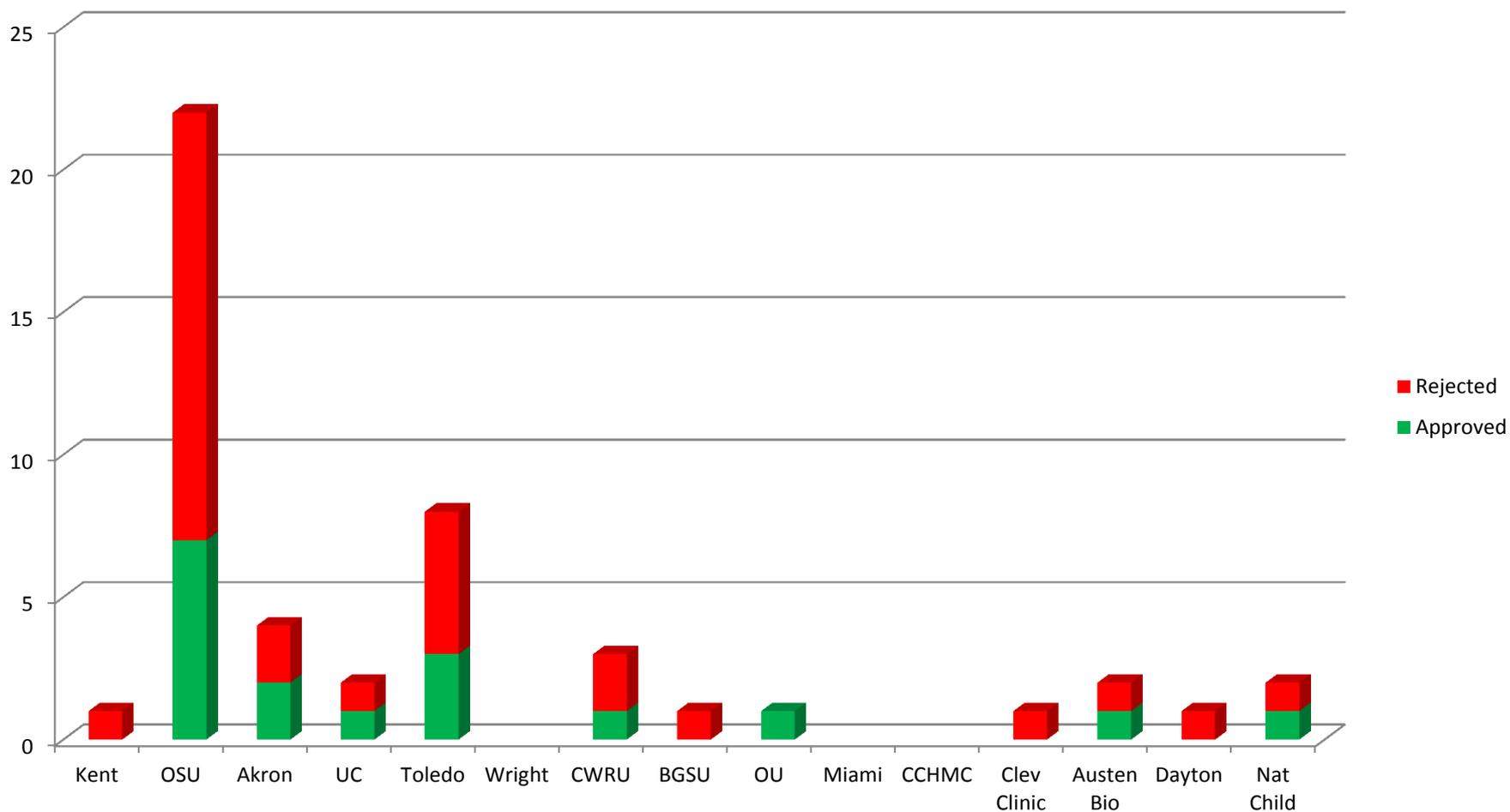
Phase 1 Approved/Rejected by Institution



Combined Approved/Rejected by Institution

Phase 2 Cumulative Through 4 Rounds

Phase 2 Approved/Rejected by Institution





Visit our website at: www.youencore.com

Innovation Platform Program

Purpose

To link the development and innovation capabilities and capacities of an already established **Innovation Platform** at an Ohio college or university or not-for-profit research institution to specific late stage development and innovation needs of Ohio client companies

***Innovation Platform** – an already existing capacity that incorporates unique technology capabilities and strengths, talent, equipment, facilities, engaged industry partners, a track record of research commercialization and innovation, intellectual property, and other resources in a particular technology area that collectively can serve as a vehicle for significant, industry-defined and directed opportunities through the development and commercialization of new products and innovations*

FY2013 Proposals

- 27 proposals submitted - 10 interviewed - 6 recommended (**green**)
- Proposals based in one or more of 9 technology focus areas:
 - *Advanced Materials* (11)
 - *Agribusiness/Food Processing* (2)
 - *Medical Technology* (12) (**3**)
 - *Sensing/Automation* (3) (**1**)
 - *Solar Photovoltaics* (1)
 - *Aeropropulsion Power Management* (2)
 - *Fuel Cells & Energy Storage* (3)
 - *IT for business/healthcare* (4) (**1**)
 - *Situational Awareness Surveillance* (2) (**1**)
- Applicant institutions:
 - *Case Western* (4) (**2**)
 - *Cleveland Clinic* (3)
 - *Cleveland State Univ.* (1)
 - *Health Foundation of Cincinnati* (1)
 - *Kent State* (1)
 - *OSU* (8) (**2**)
 - *Summa Health Systems* (1)
 - *University of Akron* (3)
 - *University of Dayton* (2) (**1**)
 - *University of Toledo* (2) (**1**)
 - *Wright State Univ.* (1)

Program Basics

- **Lead Applicants** - Ohio colleges or universities or an Ohio not-for-profit public or private research institution. Proposals must include collaboration with at least two or more Ohio for-profit companies as clients of the platform.
- **Funding**
 - \$24 million available (FY13)
 - Award range of \$1 – \$3 million
 - 1:1 cash cost share, at least half of which must come from Ohio client companies
- **External Evaluator** - National Academies of Science

**Review of Proposals to Ohio's Third
Frontier Program, 2012-2013:**

Innovation Platform Program (IPP) 2013

**The National Academies
June 12, 2013**

The National Academies

The National Academies bring together committees of experts in all areas of scientific and technological endeavors. These experts serve on a volunteer basis to address critical national issues.

The National Research Council, which operates under the auspices of the National Academies, is committed to providing elected leaders, policy makers, and the public with expert advice based on sound scientific evidence.

Committee Membership

T. S. Sudarshan, *Chair*, Materials Modification, Inc.

Viola L. Acoff, Univ. of Alabama

Catherine G. Ambrose, Univ. of Texas

David E. Aspnes (NAS), North Carolina State Univ.

Carol Cherkis, NewCap Partners

David E. Crow (NAE), Pratt and Whitney (ret)

J. Eric Dietz, Purdue University

Bruce Gitter, Indiana University School of Medicine

Jahan K. Jewayni, Independent Wealth Management Consultant

Hywel Jones, Independent Consultant

Mohammad A. Karim, Old Dominion University

Chester Kolodziej, Freedom Field Renewable Energy, Inc

Laura Mazzola, Wave 80 Biosciences

Trent Molter, Univ. of Connecticut

C. Bradley Moore (NAS), Univ. of California, Berkeley

Arthur L. Patterson, Managing Member, GTI

Shalini Prasad, Univ. of Texas, Dallas

Lloyd M. Robeson (NAE), Air Products and Chemicals (ret)

Subhash C. Singhal (NAE), PNNL

Katepalli R. Sreenivasan (NAS/NAE), NYU

Norman A. Wereley, Univ. of Maryland

Jim Wheeler, Thomas P. Miller and Associates, Inc.

Raul E. Zavaleta, Indigo BioSystems, Inc.

Committee Membership

Committee of 23 includes:

- Working engineers, scientists, academics, investors, and businessmen and women
- 6 are elected members of the National Academy of Engineering (NAE) and/or the National Academy of Science (NAS)
- 3 financial analysts
- 5 Presidents or CEOs, 2 Vice Presidents, and 1 Executive Director of private (for profit) companies
- Geographically diverse: members are from all over the United States;
- 20 previously served on the 2012 IPP review

IPP Evaluation Criteria

Technical Merit & Plan

- Can the technical challenges be met?
- Are the project goals and objectives realistic?
- Does the proposal include a plan for beyond the 3-year time period?

Commercialization Strategy

- What are the specific value propositions of the different commercial applications?
- Is sufficient evidence provided to support the contention that the market values these benefits?
- Has the Innovation Platform already achieved at least proof of principle?
- How closely matched is the project with the existing or emerging supply chain's capabilities?

Performance Goals

- What is the project's impact on Ohio in job creation, personal wealth, new sales of products, and follow-on investment? Are the reported numbers realistic?
- How successful was the performance of the team on related prior OTF grants?

Experience and Qualifications

- Is leadership demonstrated in all critical phases of the proposal?
- Does the applicant team have the relevant experience to perform the work involved?

IPP Evaluation Criteria

Budget & Cost Share

Budget:

- Is the budget justified and adequate?
- Will a supermajority of OTF funds remain with the lead applicant?

Cost Share:

- Is the cost share necessary and reasonable? Does a majority of the cost share come from the clients?
- Does the cost share represent a specific new commitment, and is it in the form of cash?
- Is the cost share being used directly in support of the Innovation Platform?
- Is the cost share firmly committed, with no contingencies or conditions, from known sources and available to the Innovation Platform at the time of Proposal submittal?

Scope of Submissions

Lead Applicant	# Submitted	# Interviewed
The Ohio State University	8	3
Case Western Reserve University	4	2
Cleveland Clinic	3	1
University of Akron	3	1
University of Dayton	2	1
University of Toledo	2	1
Kent State University	1	1
Summa Health System	1	0
Health Foundation of Greater Cincinnati	1	0
Wright State University	1	0
Cleveland State University	1	0
Total:	27	10

Evaluation of Proposals

TMP	Technical Merit and Plan
CS	Commercialization Strategy
PG	Performance Goals
EQ	Experience and Qualifications
BCS	Budget and Cost Share

E	Exceeds Requirements of the RFP
M	Meets Requirements of the RFP
D	Does Not Meet Requirements of the RFP

Proposal (Lead Applicant)	Rank	Technical Merit and Plan (TMP)	Commercialization Strategy (CS)	Performance Goals (PG)	Experience and Qualifications (EQ)	Budget and Cost Share (BCS)
13-329 Trusted Situational Awareness (University of Dayton)	1	E	M	M	E	M
13-327 Ohio Platform for Tomorrow’s Industrial Medical Imaging Systems and Equipment (OPTIMISE) (Case Western Reserve University)	2	M	E	E	E	E
13-301 Innovative Technology Platform for the Development of Spinal Devices of the Future (University of Toledo)	3	E	M	M	E	M
13-307 Intelligent Simulation Platform for Product Commercialization (The Ohio State University)		M	M	M	M	E
13-316 Commercialization of an Innovative Neuromodulation and Neurostimulation Technology Program (Case Western Reserve University)		M	M	M	E	M
13-333 The Ohio Sensor and Semiconductor Innovation Platform (OSSIP) (The Ohio State University)		M	M	M	M	M

Proposal (Lead Applicant)	Technical Merit and Plan (TMP)	Commercialization Strategy (CS)	Performance Goals (PG)	Experience and Qualifications (EQ)	Budget and Cost Share (BCS)
13-302 Innovative Technology Platform of Carbon Based Nanomaterials/Composites (The Ohio State University)	D	D	D	M	M
13-324 Concussion Management and Reduction Program (Cleveland Clinic)	D	D	D	M	M
13-330 Electrochromodynamic Systems (Kent State University)	M	M	D	E	D
13-342 Smart Sensor System Design, Development, and Commercialization (University of Akron)	D	D	D	M	M

Recommended Proposals

13-329: Trusted Situational Awareness (University of Dayton)	R	TMP	CS	PG	EQ	BCS
	1	E	M	M	E	M

Goal

- Deliver to market an open-architecture situational awareness system that will enable smaller SA companies to test and integrate their technologies.
- Incorporate cyber security metrics into the TSA system
- Enable demonstration of new SA technologies in partnership with the City of Dayton

Funds Requested: \$3,000,000

Cost Share: \$3,088,388

	State Funds		Cost Share	
Woolpert	\$1,050,000	(Personnel, Indirect)	\$2,150,000	(Indirect, Equipment, Personnel)
Optica Consulting	\$100,000	(Personnel, Indirect)	\$100,000	(Personnel)
Greenlight Optics	\$150,000	(Personnel, Services, Indirect)	\$75,000	(Equipment, Personnel)
Tenet 3	\$150,000	(Personnel, Indirect)	\$150,000	(Personnel)
City of Dayton	\$0	(N/A)	\$300,000	(Personnel)

13-329: Trusted Situational Awareness (University of Dayton)	R	TMP	CS	PG	EQ	BCS
	1	E	M	M	E	M

Market Size

- Air Traffic Control (ATC) equipment market: projected to reach \$3.9 billion by the year 2017.
- Bio- and chemical sensors market could reach \$21 billion by 2016.

For-Profit Jobs	Non-Profit Jobs	Total Jobs (Year 3)	Year 3 Revenue
26	6	34	\$3.46M

Strengths

- Strong, multifunctional team
- Targets low-hanging fruit (Woolpert’s existing customers) as well as untapped markets
- Open-architecture approach and focus on middle market enables a strong case for sustainability
- Numerous commercial possibilities – for example UAVs were recently used to locate missing persons in an avalanche and have been used for oil scouting and exploration

13-327: Ohio Platform for Tomorrow's Industrial Medical Imaging Systems and Equipment (OPTIMISE) (Case Western Reserve University)	R	TMP	CS	PG	EQ	BCS
	2	M	E	E	E	E

Goal

Commercialize two next generation products: improved radiofrequency (RF) coils for breast biopsy systems to meet new radiology standards and the use of magnesium diboride (MgB2) to respond to the shortage of liquid helium for superconducting magnets for magnetic resonance imaging (MRI) machines.

Funds Requested: \$3,000,000

Cost Share: \$3,356,095

	State Funds	Cost Share
QED	\$500,000 (Personnel, Supplies, Indirect)	\$1,200,000 (Personnel, Machinery, Indirect)
Hyper Tech	\$500,000 (Supplies, Services, Indirect)	\$1,500,000 (Indirect, Personnel, Supplies)

13-327: Ohio Platform for Tomorrow's Industrial Medical Imaging Systems and Equipment (OPTIMISE) (Case Western Reserve University)	R	TMP	CS	PG	EQ	BCS
	2	M	E	E	E	E

Market Size

- The MRI equipment market is expected to reach \$7.9B by 2015 and annually there are more than 3000 new MRI systems installed world-wide
- Overall market for magnets in this space will be approximately \$250M in the U.S.

For-Profit Jobs	Non-Profit Jobs	Total Jobs (Year 3)	Year 3 Revenue
17	10	27	\$2.7M

Strengths

- QED has identified three OEM customers for its coils and has engaged in preliminary discussions with other OEM clients
- Better MRI's can lead to better diagnosis and there is an ever increasing number of women being examined for preventive care
- Better MRI's have the ability to prevent surgery when not needed through more careful interpretation of images

13-301: Innovative Technology Platform for the Development of Spinal Devices of the Future (University of Toledo)	R	TMP	CS	PG	EQ	BCS
	3	E	M	M	E	M

Goal

Develop orthopaedic device product concepts and advanced analytical capabilities to support additional product development, prototyping, and testing. Initial proposed products include spinal implants, an infection sensor, and a family of exercise machines.

Funds Requested: \$2,355,319

Cost Share: \$2,357,961

	State Funds	Cost Share
X-Spine Systems Inc	\$450,000 (Personnel, Supplies)	\$450,000 (Personnel, Supplies)
Turning Point, LLC	\$300,000 (Supplies, Services, Other Direct)	\$300,000 (Supplies, Services, Other Direct)
Metro Medical Innovation	\$600,000 (Other Direct, Personnel, Supplies)	\$600,000 (Other Direct, Personnel, Supplies)

13-301: Innovative Technology Platform for the Development of Spinal Devices of the Future (University of Toledo)	R	TMP	CS	PG	EQ	BCS
	3	E	M	M	E	M

Market Size

- The market for spine products was worth approximately \$4.8 billion in 2010, and increased at a rate of 9% from 2008 to 2010.
- By 2015, spinal implants and replacement products could represent a market of \$5.5 billion

For-Profit Jobs	Non-Profit Jobs	Total Jobs (Year 3)	Year 3 Revenue
28	7	35	\$15.56M

Strengths

- At least one product for each client company will achieve market entry within three years
- An exercise machine already exists; the goal is to make it cheaper to reach a broader market
- The exercise machines operate from a standing position, not a sitting position like competitors, making them more ideal for targeting lower back pain

Caveat

Should be considered *only if the infection sensor work is removed from the proposal*

13-307: Intelligent Simulation Platform for Product Commercialization (The Ohio State University)	R	TMP	CS	PG	EQ	BCS
	3	M	M	M	M	E

Goal

Utilize a cloud-based modeling and simulation technology to create six manufacturing design applications. These apps would be sold through a new app store and be used by small- to medium-sized manufacturers for “digital design”. Initial apps include: ceramic matrix composites, oven temperature distribution, virtual wind tunnel, virtual crush test rig, and generalized versions of P&G apps

Funds Requested: \$2,999,936

Cost Share: \$3,500,000

	State Funds		Cost Share	
AltaSim	\$0	(N/A)	\$300,000	(Personnel)
TotalSim	\$0	(N/A)	\$450,000	(Personnel)
Kinetic Vision	\$0	(N/A)	\$450,000	(Personnel)
P&G	\$0	(N/A)	\$1,000,000	(Services, Personnel)
Intel	\$0	(N/A)	\$600,000	(Services, Personnel)
Nimbis	\$500,000	(Personnel, Other Direct)	\$700,000	(Personnel)

13-307: Intelligent Simulation Platform for Product Commercialization (The Ohio State University)	R	TMP	CS	PG	EQ	BCS
	3	M	M	M	M	E

Market Size

- The size of the opportunity is very large, as it is not limited to any one industry, product or service
- ~300,000 companies in the U.S. fit the customer profile with at least 600 in Ohio, employing more than 80,000 people, as ideal initial candidate customers

For-Profit Jobs	Non-Profit Jobs	Total Jobs (Year 3)	Year 3 Revenue
23	6	29	\$2.5M

Strengths

- Will enable small- and medium-sized manufacturers to access tools previously only accessible to large firms
- Already demonstrated the ability to simplify complex manufacturing problems into “apps” that are user friendly, do not need intensive training, and give succinct information leaving less for interpretation difficulties
- Initial apps are in high demand; project has a solid case for sustainability

Caveat

Should be considered *only if the platform makes a verifiable commitment to giving priority to Ohio firms*

13-316: Commercialization of an Innovative Neuromodulation and Neurostimulation Technology Program (Case Western Reserve University)	R	TMP	CS	PG	EQ	BCS
	3	M	M	M	E	M

Goal

Develop and market the OMNISTIM™ System—an implantable neurostimulation device and related software.

Funds Requested: \$3,000,000

Cost Share: \$3,000,000

	State Funds		Cost Share	
NDI Medical	\$1,626,000	(Personnel)	\$970,000	(Supplies, Services)
SPR Therapeutics	\$890,400	(Services, Personnel)	\$500,000	(Services)
Valtronic	\$177,000	(Supplies, Personnel, Indirect)	\$30,000	(Supplies)

13-316: Commercialization of an Innovative Neuromodulation and Neurostimulation Technology Program (Case Western Reserve University)	R	TMP	CS	PG	EQ	BCS
	3	M	M	M	E	M

Market Size

- The market for neurostimulation devices has an expected compound annual growth of over 18.6%, the fastest growing segment of the medical devices sector.
- Sales of neurostimulation products are expected to exceed \$6.8 billion by 2017.

For-Profit Jobs	Non-Profit Jobs	Total Jobs (Year 3)	Year 3 Revenue
22	3	25	\$7.5M

Strengths

- Making good progress toward commercialization of first two targeted applications.
- Has the potential to take care of many difficult patients who have Alzheimer's, Parkinson's, or other neuro-disorders

Caveat:

Should be considered *only if ODSA will require and can confirm that medical devices for both the U.S. and European markets are developed and manufactured in Ohio*

13-333: The Ohio Sensor and Semiconductor Innovation Platform (OSSIP) (The Ohio State University)	R	TMP	CS	PG	EQ	BCS
	3	M	M	M	M	M

Goal

Pursue several cooperative sensor projects:

Focal-plane detectors used in cameras in the infrared (IR) spectral range (with CE/L-3);

Electro-optic modulators for use in transmission of information (with Srico);

Remotely located surface-acoustic-wave (SAW) sensors for assessing conditions of jet engines (with Syntonics)

Funds Requested: \$2,992,147
(w/o Syntonics): \$2,543,494

Cost Share: \$3,072,653
\$2,441,126

	State Funds		Cost Share	
L-3 Communications	\$0	(N/A)	\$1,230,009	(Indirect, Personnel, Equipment)
Srico	\$230,400	(Personnel)	\$230,400	(Indirect)
Syntonics	\$448,653	(Personnel, Indirect)	\$631,527	(Indirect, Personnel)

13-333: The Ohio Sensor and Semiconductor Innovation Platform (OSSIP) (The Ohio State University)	R	TMP	CS	PG	EQ	BCS
	3	M	M	M	M	M

Market Size

- Project will primarily produce components for multiple applications, thus market size cannot be specified as the technology is truly a platform on which several things will be added or built

For-Profit Jobs	Non-Profit Jobs	Total Jobs (Year 3)	Year 3 Revenue
50	3	53	\$30.8M
45	3	48	\$29.2M

Strengths

- Two of the projects clearly advance the state of the art, can be realized in the 3-year time frame, and have an excellent chance of providing the predicted revenue and jobs
- Military and commercial markets will be pursued
- Clear linkage between platform and clients

Caveat:

Should be considered *only if the Syntonics element is removed*

Summary of Recommendations

	Rank	State Funds	Special Conditions
13-329	1	\$3,000,000	N/A
13-327	2	\$3,000,000	N/A
13-301	3	\$2,355,319	Only if the infection sensor work is removed from the proposal
13-307		\$2,999,936	Only if the platform makes a verifiable commitment to giving priority to Ohio firms
13-316		\$3,000,000	Only if ODSA will require and can confirm that medical devices for both the U.S. and European markets are developed and manufactured in Ohio
13-333		\$2,543,494	Only if the Syntonics element is removed

Final Remarks

Total state funds requested by the 6 proposals: **\$17,347,402**
(or **\$16,898,749** if recommended changes are followed)

The remaining 21 proposals, when ranked against the RFP's criteria and requirements, scored significantly lower than the recommended 6

Thank You!

The National Academies would like to thank the State of Ohio for placing its trust in our process and in our outstanding volunteer committee members.

QUESTIONS?

Third Frontier Internship Program

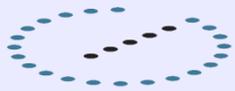


Purpose

- Develop talented workers for Ohio companies that are commercializing new products, technologies, and processes
- Prepare and expand a highly talented and technologically proficient workforce by exposing students to the strategies, practices, and processes of business
- Retain highly knowledgeable and talented students in Ohio

Program Basics

- **Lead Applicants:** Ohio nonprofit organizations representing business associations, regional economic development organizations or One-Stop employment centers; Must demonstrate ability to represent both industry and higher education interests, across the Third Frontier high-tech focus areas, in the placement of interns with Ohio companies.
- **Funding:**
 - \$3 million available;
 - Awards of up to \$430,000;
 - Supports the cost of individual internship stipends of up to \$3,000 in state funding with a required cash match of \$3,000 from the company per internship.
- **External Evaluator:** Invantage Group



INVANTAGE GROUP

Innovative strategies for your advantage.



Third Frontier

Innovation Creating Opportunity

Ohio Third Frontier Internship Program

2013

Proposal Evaluation Report

June 12, 2013

Invantage Group
www.invantagegroup.com

Proposal Evaluations

- Lead Applicants: Existing OTFIP Grantees
- Evaluation Criteria: Outlined in RFP
 - Organizational experience and qualifications
 - Statement of Work
 - Performance goals and history



Evaluation Criteria

Organizational Capabilities

- Structure & resources
- Company & school networks
- Outreach plans

Plan, Team, & Budget

- Key personnel
- Program plan
- Evaluation and assessment
- Budget details

Performance & Goals

- Past performance
- Projections and realistic assumptions

Evaluation Summary

- Review designed to evaluate...
 - Applicant preparedness
 - Performance history & capabilities
- Each applicant met RFP criteria
- Better proposals included...
 - More specific program information & greater supporting details
 - Clearer explanations regarding organizational design
 - Identification of performance expectations & enhancement plans

Evaluation Summary

Ohio Third Frontier Internship Program FY2013 Proposals Evaluated

Lead Applicant	Region	OTFIP Funds Requested	Funds for Administrative Costs	Funds for Internships	Projected Internships		Historical Internship Placement Performance		Proposal Evaluation Criteria		
					FY13 Grant (7/1/13-12/31/14)	FY11 Grant* (7/1/11-8/31/12)	FY12 Grant (9/1/12-6/30/12) Data as of 5/24/13	Organizational Capabilities	Management Plan & Budget	Performance Goals & History	
								45%	20%	35%	
TechColumbus	Central	\$277,200	\$25,200	\$252,000	84	76	29				
Workforce Initiative Association	Northeast	\$428,571	\$42,655	\$385,916	133	191	140				
Workforce Institute of Lorain County	Northeast	\$428,571	\$42,857	\$385,714	129	143	145				
Toledo Chamber of Commerce	Northwest	\$428,571	\$42,857	\$385,714	129	109	125				
Community Action Organization of Scioto County	Southeast	\$157,500	\$7,500	\$150,000	50	11	33				
Southeastern Ohio Port Authority	Southeast	\$211,200	\$19,200	\$192,000	64	N/A	46				
Cincinnati USA Regional Chamber	Southwest	\$428,571	\$42,857	\$385,714	129	105	105				
Dayton Area Chamber of Commerce	West Central	\$428,571	\$41,300	\$387,271	129	120	98				
		\$2,788,755	\$264,426	\$2,524,329	846	755	721				

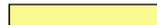
* Development reserves the right to reallocate Ohio Third Frontier Funds between regions and has done so during points in past funding cycles.

Evaluation Definitions

Strong supporting evidence



Adequate supporting evidence



Weak supporting evidence



Recommendations

- Recommendation for program funding
 - All applicants provided preponderance of positive evidence
 - Solid organizational infrastructures
 - Workforce development experience
 - Strong business networks
 - Broad array of educational partners
 - Reasonable performance goals and support plans

Summary

Ohio Third Frontier Internship Program FY2013 Proposals Evaluated

Lead Applicant	Region	Total Funds Requested	Funds for Admin Costs	Funds for Internships
TechColumbus	Central	\$277,200	\$25,200	\$252,000
Workforce Initiative Association	Northeast	\$428,571	\$42,655	\$385,916
Workforce Institute of Lorain County	Northeast	\$428,571	\$42,857	\$385,714
Toledo Chamber of Commerce	Northwest	\$428,571	\$42,857	\$385,714
Community Action Organization (Scioto)	Southeast	\$157,500	\$7,500	\$150,000
Southeastern Ohio Port Authority	Southeast	\$211,200	\$19,200	\$192,000
Cincinnati USA Regional Chamber	Southwest	\$428,571	\$42,857	\$385,714
Dayton Area Chamber of Commerce	West Central	\$428,571	\$41,300	\$387,271
		\$2,788,755	\$264,426	\$2,524,329

Open Innovation Incentive Program

Open Innovation Incentive Program



NATIONAL CENTER FOR
THE MIDDLE MARKET

\$10M to \$1B in revenues

Reduce barriers and upfront costs



Solve innovation challenges

Speed time to market

Reduce development costs

Improve competitiveness



Create economic benefits to Ohio

Open Innovation Incentive

- Subsidize half the costs of working with two qualified Open Innovation Intermediaries



- For each innovation challenge
 - Transactional costs: \$25,000
 - State support: \$12,500



- Founded in 1999 with offices in Boston, Cleveland, Liverpool and Japan
- Unique Internet presence with over 150,000+ registered users
- 16,000+ registered small businesses
- Technology scouts on the ground around the globe
- In house patent and IP transfer and sale expertise
- Yet2 venture arm



- Unique high touch business model
- Identify, vet, and consult around technology targets
- Identify later stage technologies that may already be in use in some form
- Set up introductions and meetings
- Move into NDA agreements and provide deal facilitation services



- Elmer's is an Ohio success story utilizing OII
- Needed help with the research side of R&D and OII provided excellent opportunity
- 138 Target technology solutions identified, 20+ pending, 8 highly interested, 4 company introductions at NDA stage
- Major product line improvement that will require increased production, sales, distribution and product management in Ohio

Artificial Soil Technology License – DuPont / 6062

yet2.com Links 6062 Holdings LLC and DuPont Central Research & Development in Artificial Soil Licensing Agreement

23 August 2005 6062 Holdings LLC, of Beachwood, Ohio, has licensed patents for an artificial biodegradable soil technology from DuPont Central Research & Development (CR&D). The agreement grants an exclusive global license to further develop and commercialize this DuPont technology.

yet2.com Inc. brought the two parties together five months ago when DuPont CR&D posted information about this available technology on the *yet2.com* website. 6062 Holdings LLC noticed and responded with interest.

The technology provides the optimum balance of water and gases necessary to sustain higher rates of plant growth through the use of in-ground bio-degradable polymer fiber balls. The fiber balls also reduce shipping and handling costs because they are lighter than the soil plants that are currently shipped. The fiber balls can also be watered from below, as opposed to being sprayed from above as traditional soils require. The fiber balls retain 30 to 50 times their weight in water, and need less than half the amount of water required in soils.



NINESIGMA OVERVIEW



OFFICES IN USA, EUROPE, JAPAN, AUSTRALIA, KOREA AND CANADA



37,000 + PROPOSALS RECEIVED FROM 116 COUNTRIES



2,500 + OPEN INNOVATION PROJECTS COMPLETED



DIVERSE CLIENTS
MULTINATIONALS, MIDDLE MARKET, NON-PROFIT, GOVERNMENT



2 MILLION + SOLUTION PROVIDERS CONTACTED



PROGRAM MANAGER EXPERIENCE: 28 YEARS AVERAGE INDUSTRY EXPERTISE, 150 PROJECTS MANAGED

OUR MISSION IS TO BE

THE BEST IN THE WORLD AT UNCOVERING TECHNOLOGIES TO SOLVE YOUR INNOVATION NEEDS.

OHIO THIRD FRONTIER PROGRAM: **OPEN INNOVATION INCENTIVE**

- ❖ Open Innovation as means to create growth and jobs in Ohio
- ❖ OII enabled middle market search for NineSigma
- ❖ Program currently operating successfully on schedule and NineSigma pleased with receptivity of middle market companies

OPEN INNOVATION INCENTIVE CLIENTS

Congratulations to the following companies who have engaged with NineSigma in the Ohio Third Frontier Open Innovation Incentive Program.



Open Innovation



- Nearly 100 year old private company
- Cleveland HQ, manufacturing and DC
- Plumbing products
- Nearly 1000 Associates Worldwide
- ~ 10,000 SKUs
- Over 50 million cans of solvent cement were produced last year



Innovation Focus

- Corporate strategy focusing on growth and innovative new products
 - Investment focused on product development
 - Adding engineers/chemists/application engineers
- Open innovation concept tried with Nine Sigma/Third Frontier
 - Third Frontier funding enabled use of open innovation
- RFQ with Nine Sigma on using “specialized” coatings to make P traps that are ADA compliant
 - Received list of companies that are interested
 - Scheduling meetings to discuss details
 - Potentially major breakthrough for Oatey!!

Other Business

Next Third Frontier Commission Meeting

August 15, 2013