



Pennsylvania Infrastructure Technology Alliance

A Commonwealth, University and Industry Partnership

Pennsylvania Infrastructure Technology Alliance (PITA)

Economy, Business and Jobs Caucus

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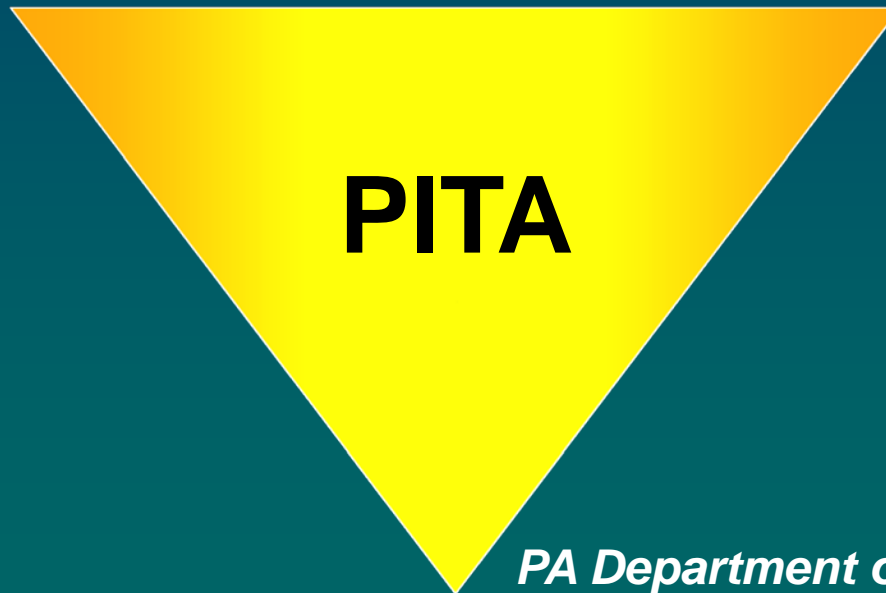
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PITA Program Overview

- Unique university/industry/government partnership

*Lehigh University
&
Carnegie Mellon
University*



*PA Industrial
Partners*

*PA Department of Community and
Economic Development*

Mission

- **To assist the Commonwealth of Pennsylvania and its companies:**
 - **Develop new technologies**
 - **Increase operating efficiency**
 - **Retain highly trained/educated students**
 - **Enhance economic development**
 - ❖ **\$160 million quantified economic benefits (through FY08)**

Strategy

- **Conduct technology development projects with PA companies**
 - 933 individual projects to-date*
 - 330 PA company project partners*
 - 345 faculty*
 - 1600+ students *



* Data obtained from PITA final reports and DCED Database

Examples of Recent Industry Partners

■ Southwestern PA

- Bombardier
- Gannett Fleming
- Invivomon

■ Southeastern PA

- Freedom Sciences
- Arkema

■ Northeastern PA

- Schott North America

■ Central PA

- WavesInSolids
- Olympus NDT

■ Lehigh Valley

- CEWA Technologies
- EcoTech
- Structural Services

■ Lancaster

- High Steel Structures

Strategy

- Develop technology leading to new PA companies (through FY08)
 - 12 new companies affiliated with PITA supporting technologies*

** Data obtained from PITA final reports and DCED Database*



BoneCraft, LLC

Pervasive Sensors, Inc.



Carmell
THERAPEUTICS



inspect**t**ech



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Strategy

- **Seed research and technology development projects that attract funding from other sources**
 - **Examples of Federal funding sources include**
 - ❖ **National Science Foundation**
 - ❖ **Department of Energy**
 - ❖ **Federal Highway Administration**
 - **Follow on funding = \$81+ million (FY04-07)***
 - **Program leverage funding ratio = 2.74 (FY05-09)***

* Data obtained from PITA final reports and DCED Database

Strategy

- Conduct educational outreach programs for the benefit of PA companies and students
 - STEM programs
 - REU programs
- Enable world-class PA colleges and universities to remain at the forefront of engineering research and education

PA College/ University Partners

- Cedar Crest College
- Cheyney College
- Desales University
- Drexel University
- Duquesne University
- Indiana University
- Lafayette College
- Mercyhurst College
- Northampton CC
- Penn State University
- Penn State University – Erie
- Temple University
- University of Penn
- University of Pittsburgh
- Villanova University
- Widener University

Outcome of Partnership

- **Create an environment linking PA companies, agencies, and students to increase the creation and retention of high paying jobs in the Commonwealth**

Structure of Typical PITA Project

- Project is identified that supports PITA Goals
- Project is lead by faculty at either Carnegie Mellon University or Lehigh University
- Project partner includes Pennsylvania based company that contributes either through:
 - Direct financial support or in-kind support
- Project leader targets \$2 of leveraged funding for every \$1 of PITA funding
- Graduate student participates in program

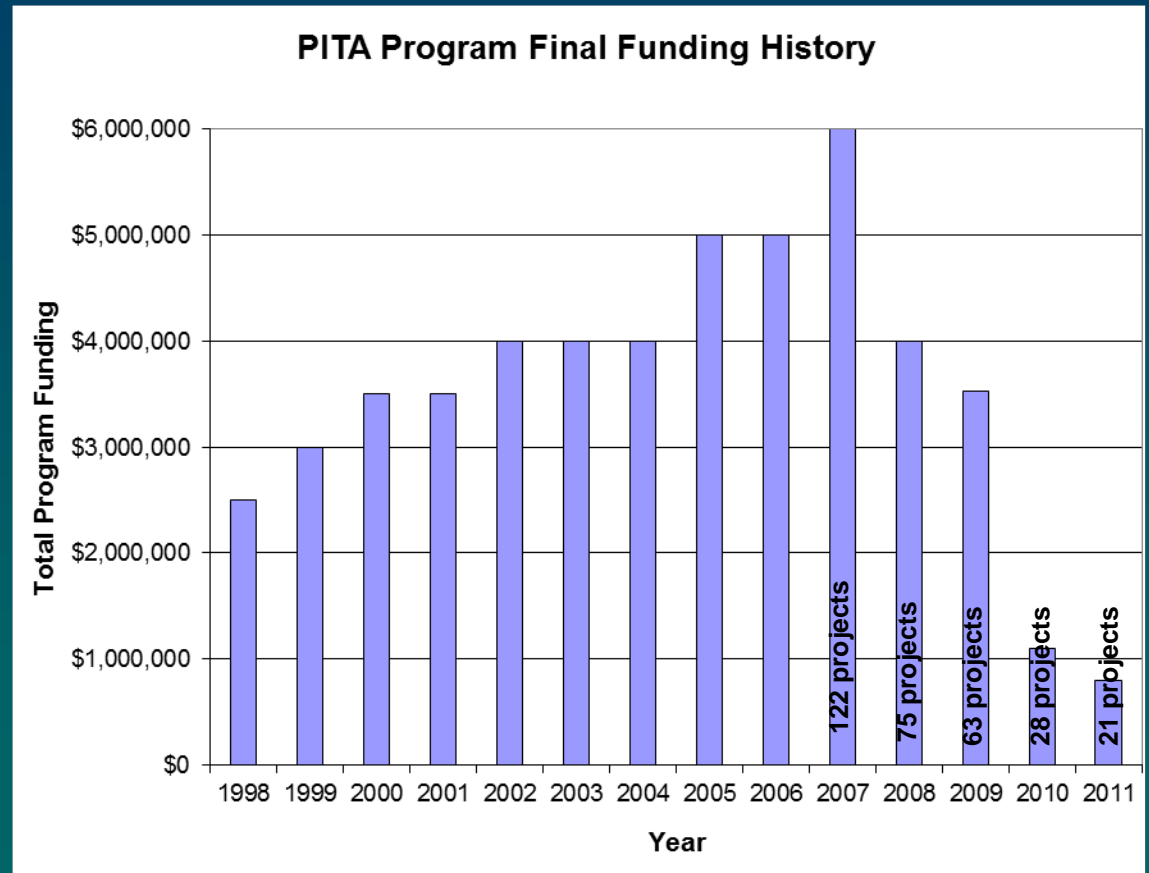
Technology Focus Areas

■ Current Technology Focus Areas

- Innovative Infrastructure Systems (IIS)
- Information and Systems Technology (IST)
- Product and Process Design and Optimization (PPDO)
- Courses and Outreach (COP)
- Biomedical and Health Engineering (BHE)
- Environmental and Energy Technology (EET)
- Nanotechnology (NANO)

PITA History

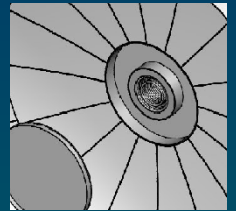
- Initial funding: FY98
 - \$2,500,000
- Currently in 14th year (FY11)
 - \$785,000
- FY12 funding = \$0 in Governor's proposed budget
- Request = \$2,000,000



Recent Project Examples

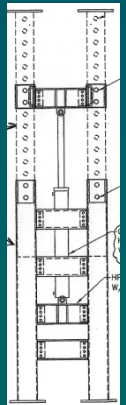
- **Project Title:** *Novel Concentrated Solar Power Collector with Thermal Energy Storage*

- **Industry Partner:** CEWA Technologies, Inc. (Bethlehem)
- **Summary:** CEWA Technologies is developing a proprietary concentrated solar power (CSP) capable of storing thermal energy that can be used for electric power generation, industrial process heat, and HVAC applications.



- **Project Title:** *Temporary Bridge Support Structure Confirmation Testing*

- **Industry Partner:** *Structural Services, Inc. (Bethlehem)*
- **Summary:** *Structural Services has developed a mobile, hydraulically extendable and easily installed temporary bridge support structure*



Recent Project Examples

■ **Project Title:** *Autonomous Guidance for People Mover Vehicles*

- **Industry Partner:** Bombardier Transportation, Inc. (Pittsburgh)
- **Summary:** Bombardier and CMU have teamed together to developed autonomous guidance controls for Bombardier's automated people movers (APMs).



■ **Project Title:** *Facilities Management in 3D World*

- **Industry Partner:** Gannett Fleming, Inc. (Pittsburgh)
- **Summary:** Gannett Fleming and CMU will develop new methods to allow the integration of GIS, BIM and CMMS technologies to provide improved visualization techniques for operations and maintenance in facilities.



What Industry is Saying About PITA

- *“PITA provides a transition from the academic world to the business world. PITA is tremendously important in helping Pennsylvania companies find and retain the very best and most talented workers.”*
 - Astro Teller, BodyMedia Inc.

What Industry is Saying About PITA

- *“PITA provides the ability for us to leverage expertise in the development of new products and processes. The Corrugated Steel Bridge Girder program links High Steel Structures, Lehigh University, Modjeski and Masters, PennDOT, and the Federal Highway Administration. We could never undertake this scope of development as an individual company.”*
 - Paul Loftus, High Steel Structures, Inc.

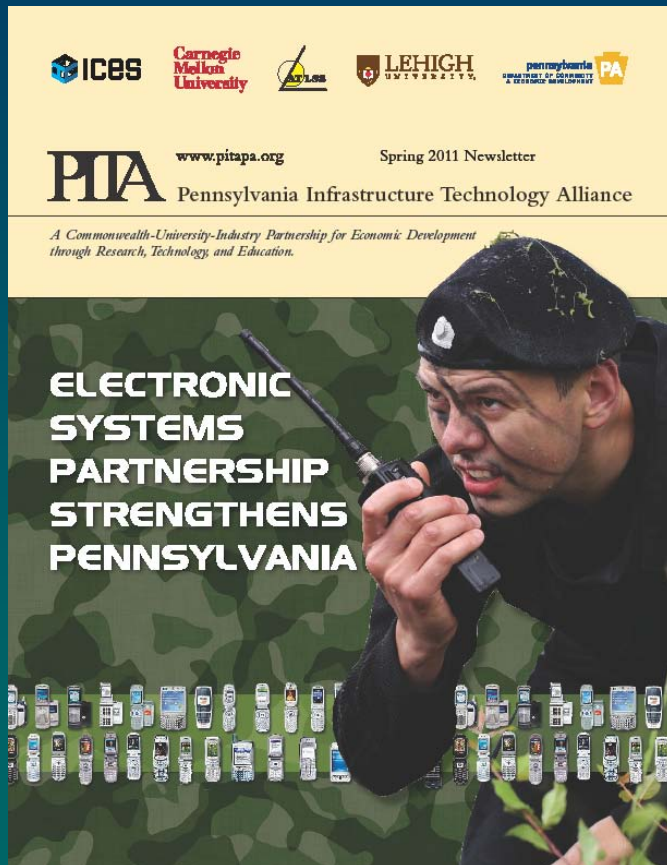
What Industry is Saying About PITA

- *Therein, I think, lies PITA's greatest strength: making exposure to new ideas more readily accessible to industry and the fostering of connections between thought leaders in the University and Pennsylvania industrial partners.*
 - Kenneth Anselmo, Air Products and Chemicals

What Industry is Saying About PITA

- *“We are thrilled for the University of Pennsylvania and Lehigh University. A very talented group of engineers spent some very long hours and surmounted some very formidable technical obstacles to achieve something that has game-changing implications for how we view and use autonomous technology.”*
 - Thomas Panzarella, Freedom Sciences, LLC

2011 Spring Industry Newsletter



- *Partnership Strengthens Ties Between Western PA Materials and Circuit Communities*
- *Desalination Process Moves Toward Commercialization*
- *PITA-Funded Engineering Camp Alum Advocates for S.T.E.M.*
- *PITA Funding Allows for Creation of Blood Monitoring Technology*
- *Developing the Future of the Pennsylvania Glass Industry*