



Global Alliance for Technology Transfer and  
Entrepreneurship (GATTE):  
Taiwan-Northeast Indiana Region  
Opportunities and Capacities

For Presentation at  
2012 Taipei International Invention Show & Tecnomart  
Taipei, Taiwan  
September 20-23, 2012

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**Paul I-Hai Lin**, Professor of Electrical & Computer Engineering Technology  
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**Scott Naltner**, Executive Vice President, Northeast Indiana Econon  
Development Alliance



Acknowledgements

- Thanks to the sponsors and organizers of 2012 International Invention Show & Technomart
- This presentation is a collection of efforts of an interdisciplinary team who are dedicated to help improving the current regional (if not global) economic challenges
- The concept of ITTTES and GATTE are developed and led by Michael Wartell (IPFW Chancellor) and Walter Branson (IPFW VC for Financial Affairs)



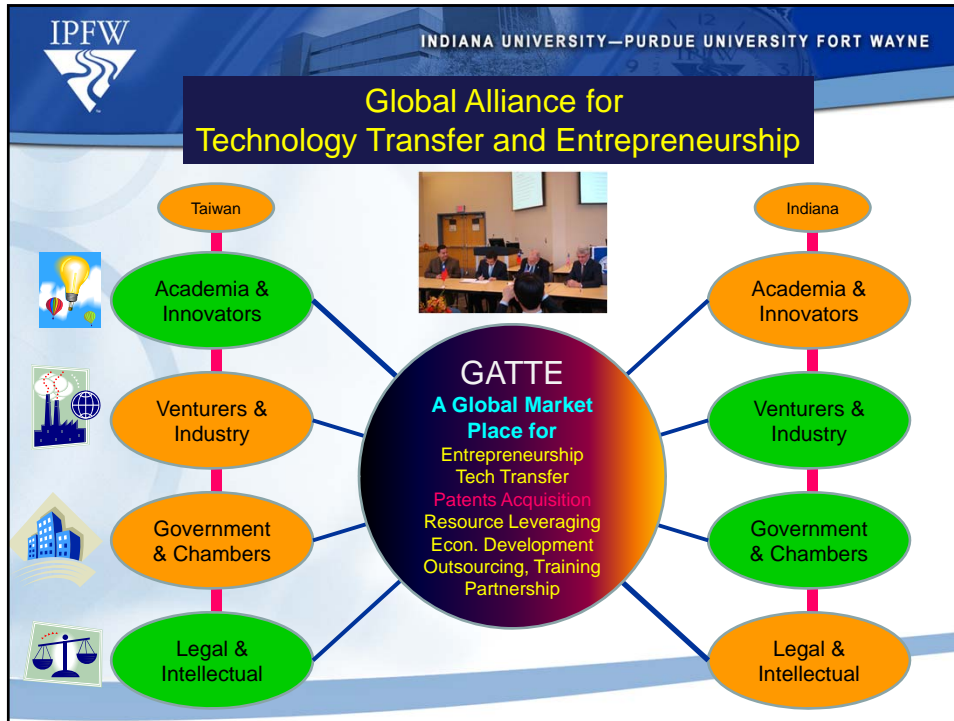
## The GATTE Members in Taiwan

- Chung Yuen Christian University (CYCU): <http://www.cycu.edu.tw>
- Feng Chia University (FCU): <http://www.fcu.edu.tw>
- I-Shou University (ISU): <http://www.isu.edu.tw>
- National Cheng Kung University (NCKU): <http://www.ncku.edu.tw>
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- National Taipei University (NTPU): <http://www.ntpu.edu.tw>
- Southern Taiwan University of Technology (STUT):  
<http://www.stut.edu.tw>
- Taipei Medical University (TMU): <http://www.tmu.edu.tw>



## Some Observations

- Shakedown on global economy is still underway due to depletion of fossil energy source, wars in middle east, disasters, collapse of financial market, people lives longer premeum of healthcare, etc.
- No place to hide your money without losing its value. The only way to preserve the value of money is to invest on innovation, thus promoting entrepreneurship
- Entrepreneurship creates “new” jobs and keeps industrial & business activities moving forward
- Entrepreneurship would require a fundamental change in higher education its delivery systems and governing policy; e.g. P&T, soft skills leadership, info tech, engage in economic development
- Tradition on making big bucks is replaced with creating long-steady wealth
- Sustainability of energy, environment, healthcare, and information technology are the key global issues



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### Indiana-Taiwan Technology Transfer and Entrepreneurship Summit (ITTES)

09/27 – 09/30, 2011

Initiated by Academia

- To expand the market for the intellectual properties developed in Taiwan
- To promote entrepreneurship through transfer of Taiwan's innovative technology to Indiana and *vice versa*; aiding to economy recovery through global business/technology partnership; **GATTE**
- To develop an accelerated process toward bringing technology to market; **GATTE**
- To develop a global market place for technology patents, intellectual licensing, business development, investment attainment; **GATTE: an international enabling task-force for tech transfer and repository of global intellectual properties**
- To secure "soft landing" status for NIIC

**Indiana Partners:**

- Indiana University-Purdue University Fort Wayne
- Purdue University
- Indiana University
- U of Southern Indiana, NSWC Crane

**Taiwan Partners (from North to South:)**

- National Taipei University of Technology
- Chung Yuan Christian University
- Feng Chia University
- National Formosa University
- National Cheng Kung University

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### Energy, Environment, Information Technology, and Healthcare

- **Track 1:** Nano-Scale, Electronics and Thermoelectric Material Technologies
- **Track 2:** Renewable Energy, Environmental and Water Management Technology
- **Track 3:** Wireless Sensors, Data Acquisition, and Monitoring Technology
- **Track 4:** Novel Instrumentation and Detection
- **Poster Presentations:** NSWC Crane (17), Purdue Research Foundation (6), Taiwan Research Partners (5)

FePt nanoparticle as dual modality contrast agent for CT/MRI

In vitro test: T<sub>2</sub>-weighted image, HU measurement

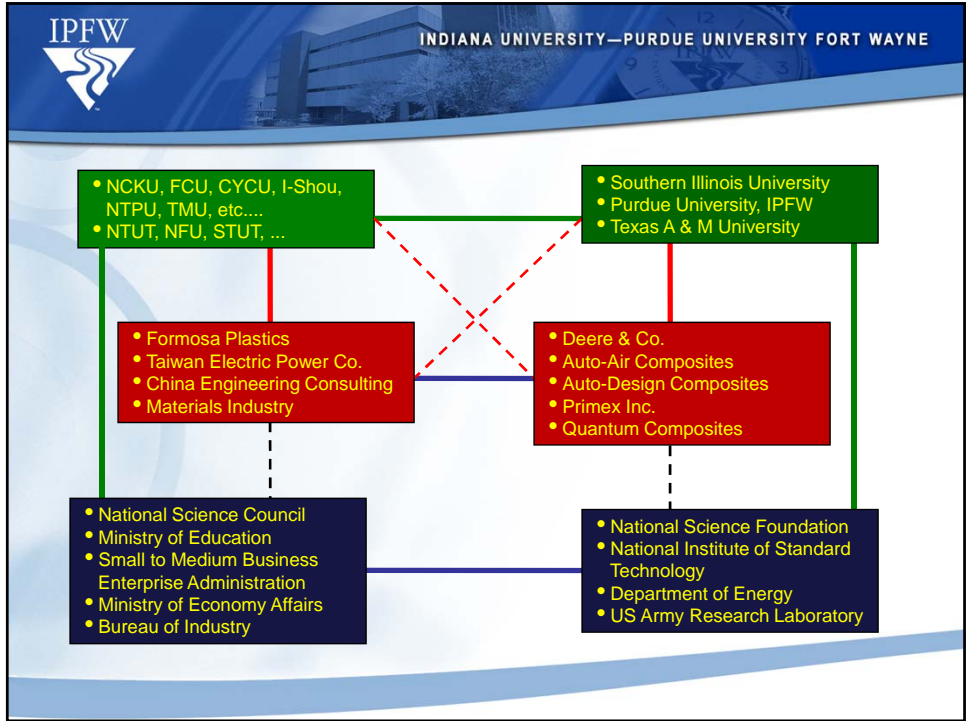
In vivo test: Tumor-bearing mice, MRI, CT

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### GATTE Technology-Market Profile

Yes	No	Maybe	
x			License technology to U.S. investors/businesses
x			Establish U.S. sales and marketing office
		x	Create a U.S.-based business start-up with Taiwanese investment
		x	Develop a strategic manufacturing partnership
x			Sales and distribution of product to U.S.

Yes	No	Maybe	
		x	Legal services (intellectual property and commercial law)
x			Business valuation
	x		Technical support (including testing, engineering and prototyping)
	x		Regulatory compliance
		x	Marketing and Market Survey
		x	Business planning
x			Investment capital and financing



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## Venturers & Industry

# Northeast Indiana

Adams, Allen, DeKalb, Huntington, LaGrange, Noble, Steuben, Wabash, Wells, and Whitley Counties

**Demographics:**  
~685,000 people 2010 Census  
~3,960 sq. miles

**Population growth this decade** 2000-2009  
4.1% regionally  
2.8% Midwest US (IL, IN, KY, MI, and OH)  
8.7% nationally

**Manufacturing employment** Private, 2009  
24.1% of Northeast Indiana jobs  
11.0% nationally

**Wages from manufacturing** Private, 2009  
31.8% Northeast Indiana  
13.4% nationally

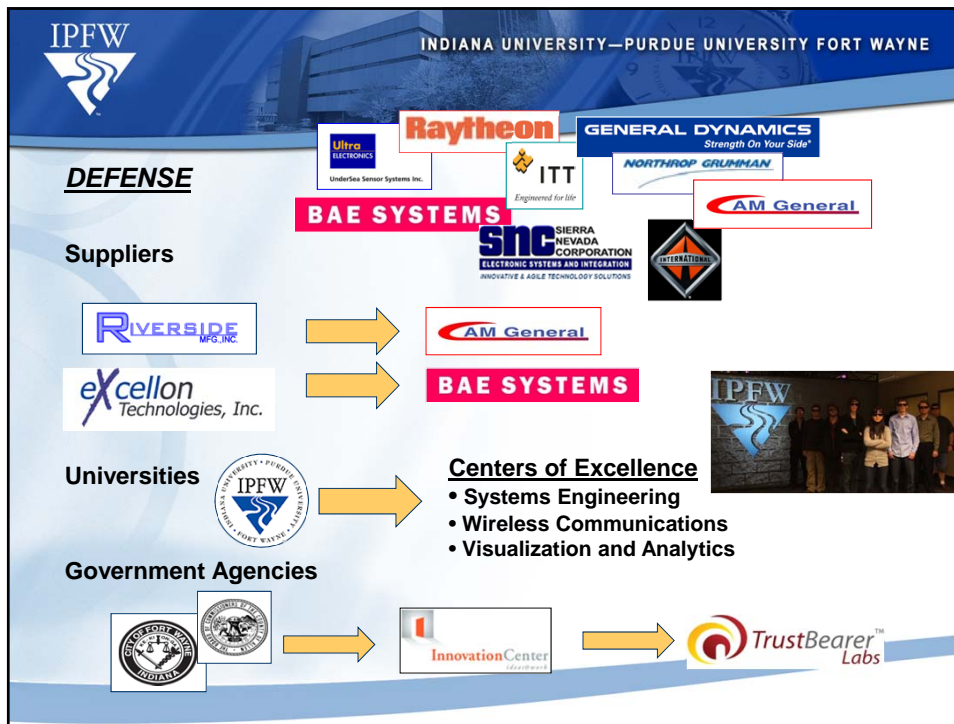
**GDP from manufacturing** Private, current \$, 2009  
21.7% Fort Wayne MSA  
12.3% nationally

**Regional Industry Clusters:**

- Advanced Manufacturing; SDI
- Defense; Communication
- Financial Services; Lincoln
- Food Processing
- Life Sciences; Hospitals, Orthopedics, Biomedical
- Transportation and Logistics

*Data from the Community Research Institute at IPFW*





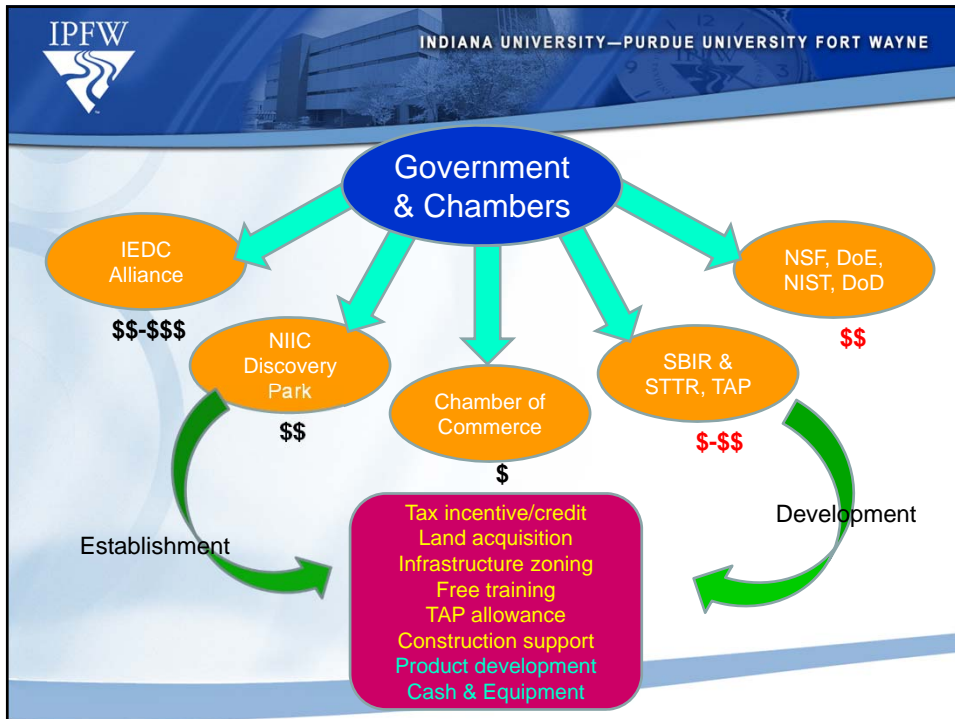


# NE Indiana Top Employers

Company	FTE
Lutheran Health Network	4,156
Parkview Health System	3,933
General Motors	3,341
Steel Dynamics	2,435
Lincoln Financial Group	1,750
BF Goodrich Tire Manufacturing	1,584
ITT Corporation	1,581
Nucor	1,525
Raytheon	1,200

Company	FTE
Frontier Communication	1,200
Fleetwood RV	1,199
Navistar International	1,150
Norfolk Southern	942
BAE Systems	899
United Technologies	648
Fort Wayne Metals	491
Vera Bradley	407

\* Data from the Northeast Indiana Regional Partnership and the Community Research Institute





## The Alliance Project (Allen County Economic Development Alliance)

- **SDI La Farga, LLC**, April 2011
  - Steel Dynamic Inc. (5<sup>th</sup>) invests \$39 million in new joint-venture
  - La Farga Group, Spanish Metals Manufacturer, headquartered in Barcelona, Spain
  - Advanced Manufacturing Technology to make copper wire
  - Created by La Farga Group
- **Franklin Electric**, \$25M, 
  - The world's leading global provider of complete water and fueling systems

<http://www.franklin-electric.com/corporate/default.aspx>

- **General Mills Inc.**, total investment \$34.6 M, May 2011, <http://www.generalmills.com/>
  - The 6<sup>th</sup> largest food company and market some of the world's best-loved brands: Cheerios, Green Giant, Betty Crocker, Pillsbury, Yoplait...
- **Wireless Technology Center**, funded by Talent initiative and regional defense industry
  - In the process to develop software defined radio lab (SDR)



Item	Value to SDI La Farga, LLC
Real & Personal Property Tax Abatement	\$1,869,257
Performance Base Incentive	\$102,695
Property Purchase Assistance	\$700,000
Hoosier Business Investment Credit (HBI)	\$300,000
Skills Enhancement Fund (SEF)	\$20,000
Customized Recruitment/ Screening	\$10,000
On-the-Job Training	\$75,000
Computer & Core Competencies Workshops	\$4,500
<b>Total Value to SDI La Farga, LLC</b>	<b>\$3,081,452</b>

Item	Value to SDI La Farga, LLC
<b>Total Investment</b>	<b>\$38,998,500</b>
Projected Payroll Total	\$2,478,740
-Average Salary	\$70,824
-New Jobs	35
-Retained Jobs	0







Item	Franklin Electric
<b>Total Investment</b>	<b>\$25,252,000</b>
Projected Total Payroll	\$20,768,800
-Average Salary	\$79,880
-New Jobs	35
-Retained Jobs	225
<b>Incentives</b>	
-TIF	\$7,082,714
-EDGE Tax Credit	\$2,700,000
-WorkOne Northeast	\$250,000
<b>-Total</b>	<b>\$10,392,714</b>



- Relocation of Headquarters to Fort Wayne
- Center of Excellence
- Partnership with IPFW; IMSE, Global Workforce Development




Item	Value to General Mills
<b>Incentives</b>	
-Tax Abatement	\$2,845,599
- Land Purchase Assistance	\$250,000
-EDGE Tax Credit	IEDC \$500,000
-WorkOne Northeast	\$70,000
<b>Benefits</b>	
-120,000 sq. ft. access road	\$300,000
-Accelerate/Decelerate Lanes	
-Reconstructing the Drains	\$200,000
-Sewer Infrastructure	\$350,000
<b>-Total</b>	<b>\$4,515,599</b>

Item	Value to General Mills
Total Investment	<b>\$34,600,000</b>
Projected Total Payroll	\$1,950,000
-Average Salary	\$30,902
-New Jobs	65
-Retained Jobs	78



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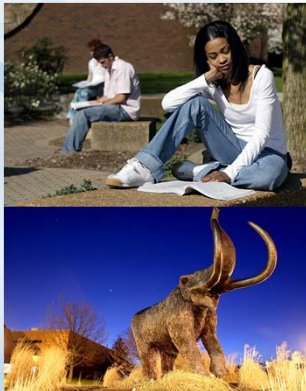
**IPFW**



- Largest and most comprehensive public university in Northeast Indiana
- Opened in 1964 as a combined campus of Indiana and Purdue Universities
- Indiana University and Purdue University degree programs
- IPFW has grown into a multi-campus community with over 20 buildings
- Graduates over 1,700 students per year at all degree levels

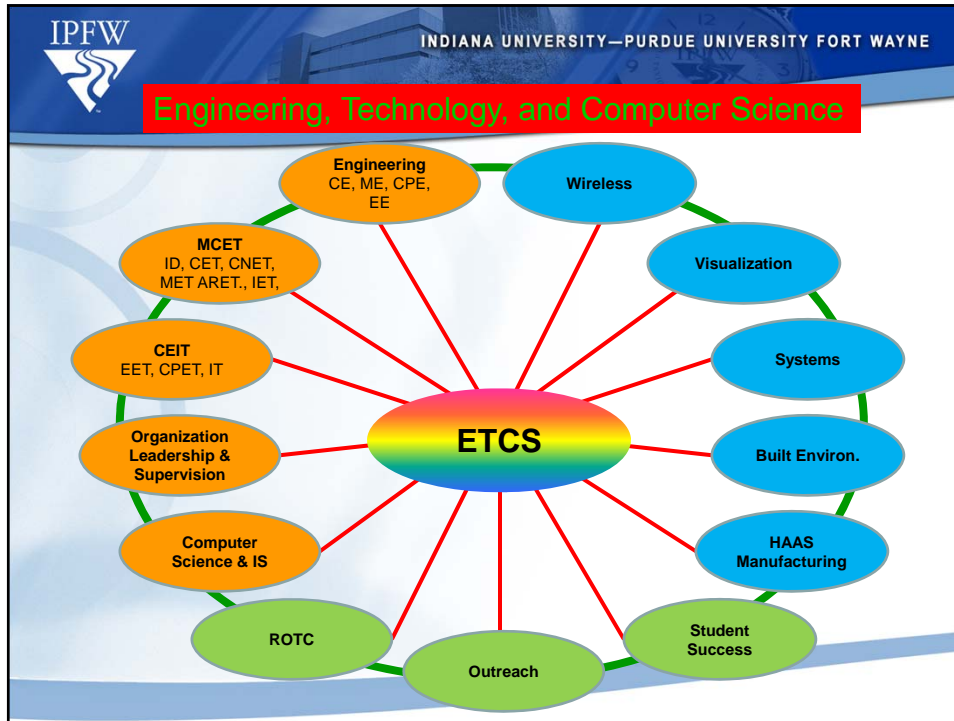
PURDUE UNIVERSITY INDIANA UNIVERSITY IPFW

IPFW INDIANA UNIVERSITY—PURDUE UNIVERSITY FORT WAYNE



- Over 14,000 students
- Diversity of students with 45 states and more than 67 countries represented
- Additional 24,000 students pursue non-credit opportunities through Continuing Studies
- Nine academic units offer more than 200 academic degree programs
- Students can earn Associate, Bachelor, and Master's degrees, undergraduate and graduate-level certificates

PURDUE UNIVERSITY INDIANA UNIVERSITY IPFW

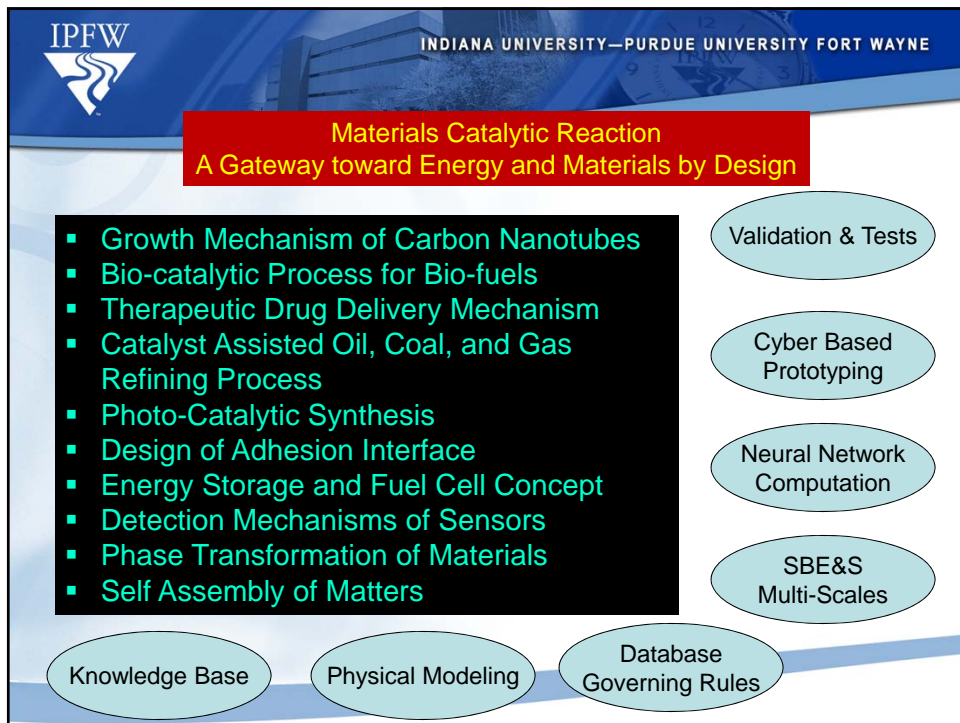
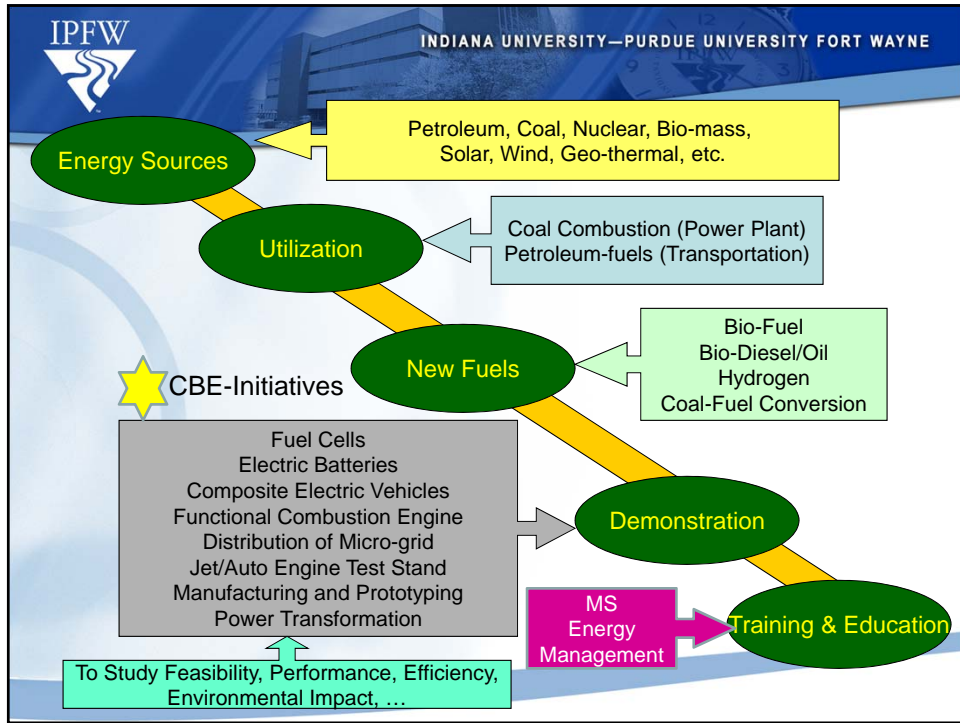


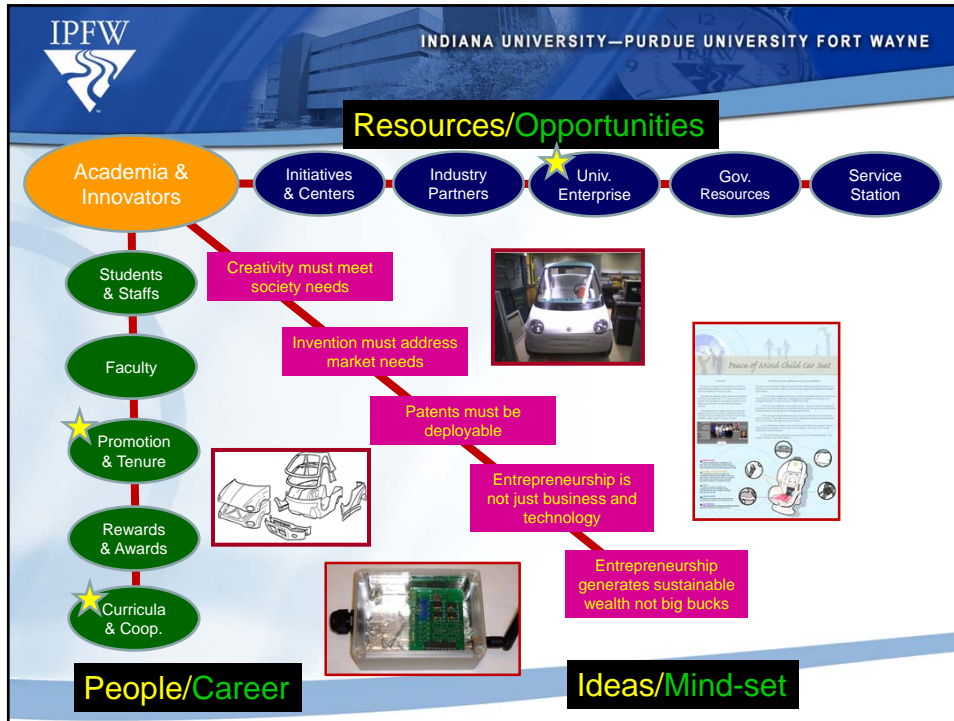
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**Centers of Excellence**

- Wireless
- Visualization
- Systems
- Built Environ.
- HAAS Manufacturing

- Embedded systems, software defined radio, sensors & sensors network, wireless communication, RFID
- Integrated visualization and simulation, 3-D virtual navigation, mobile education (STEM and beyond), apps development
- Bridge health monitoring systems, cyber physical systems, autonomous robot systems
- Energy economy and new industrial revolution, renewable energy, core facility, green technology
- Rapid prototyping





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## IPFW Office of Engagement

- Key contact for access to IPFW, Purdue and Indiana University programs for businesses, government and community partnerships
- Facilitate access to:
  - **Research capabilities (Government Grants & Industry Research)**
  - **Technical expertise (Faculty and Student Projects)**
  - **Intellectual property (Purdue, Indiana University and NSWC Crane)**
  - **Educational services & training opportunities**
  - **Internship/co-op/student hiring programs**
- Provide representation for regional businesses to the universities in the development and enhancement of programs.

PURDUE UNIVERSITY

INDIANA UNIVERSITY

IPFW INDIANA UNIVERSITY—PURDUE UNIVERSITY FORT WAYNE





- Engagement Office
  - Serves to focus the resources of multiple complementary institutions to a single geographic region
  - Launched in January 2006

Relationships & Results (through 06/11)

- 418 businesses & organizations
- 172 businesses with completed engagements
- 41% completion rate



## Engagement Office Projects

- **Business Plan Competition (5 years)**
  - Program to educate entrepreneurs and support writing of business plans
  - Entrants competed for \$50,000 in prizes to fund their business venture
- **IU – Purdue Technology Showcase (5 years)**
  - Presentations of university IP ready for commercialization
  - Showcase technologies for businesses, entrepreneurs and investors
- **Work One Economic Growth Summit (4 years)**
  - Program to connect industry and K-12 educators to enhance student outcomes
- **Defense Industry Association – NIDIA (3 years)**
  - Lilly Endowment Talent Initiative(\$20M grant)
  - Networking and educational programs with regional business and federal labs



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## INNOVATION PARK PROFILE

ISO 9001:2008 CERTIFIED

INDIANA CERTIFIED TECHNOLOGY PARK

HUBZone Historically Underutilized Business Zone

nbia National Business Incubation Association

Founded.....	December 1999
Temporary Incubator Operational .....	August 2001
Innovation Center Occupied / Innovation Park Established .....	September 2005
Park Total Square Footage .....	73,403 (2009)
Park Site.....	55-Acre Greenfield Campus
Organization Type.....	Community Non-Profit
Organization Focus.....	Higher quality, higher paying jobs/companies
Host Institution .....	Indiana University / Purdue University Fort Wayne (IPFW)
Full-Time Employees (FTEs) .....	10
Number of On-Campus Client Companies .....	39
Indiana CTP Certifications .....	2004 / 2009
Outreach.....	11-County Region



Northeast Indiana Innovation Center High Technology Business Incubator



Emerging Growth Center  
Our new home for NIIC graduates & 2nd-stage ventures



Cole Foundation Conference & Training Center in the Emerging Growth Center

IPFW INDIANA UNIVERSITY—PURDUE UNIVERSITY FORT WAYNE

## NORTHEAST INDIANA INNOVATION PARK

*A synergy of Northeast Indiana's assets generating innovation, entrepreneurship, technology, and knowledge*

**Growth of Existing Companies**

**Creation of New Companies**

**Commercialization of New Ideas & Intellectual Property**

**Increases In**  
**Technology Cluster Jobs & Companies**  
**Average County Wage Rates**  
**Innovation Park Payroll Base**

*Innovation Center Performance through 12/31/2009:*  
**AVERAGE PARK WAGE = \$52,875**  
**TOTAL PARK PAYROLL = \$8.1 MM**  
**\$71 MM OF INVESTMENT**  
**458 JOBS CREATED**

**99.1% OF PARK CLIENTS STAY IN OUR REGION**  
**91.8% OF PARK CLIENTS ARE STILL IN BUSINESS AFTER 5 YEARS**



## NIIC's Current Tenant Profile

### Information Technology Companies – 23

- Cirrus ABS – a web technology company
- GooRoo LLC – a NIIC student venture Lab company
- Guild Press LLC – a NIIC student venture Lab company
- Honor Education – a NIIC student venture Lab company
- IntelliTek Systems – a Cloud-based integrated CRM, Sales Force Automation, etc.
- BBK Group, Inc – corporation telecommunication management and cost control
- **Scadata Scientific, LLC** – communication and data transfer technologies

### Biomedical Companies – 5

- BioDuct LLC – developing patent protected avascular tissue repair platform technology
- BioPoly RS LLC – developing a joint resurface biomaterial
- **Schwartz Biomedical** – Tissue engineering research
- Solistice Medical - a medical device asset lifecycle management company



## NIIC's Current Tenant Profile (cont.)

### Advanced Manufacturing Companies – 3

- Digital Hydraulic LLC
- Phoenix Consulting, LLC
- **American Axle** - leading companies in the automobile industry
- Systemental Inc – Lean manufacturing/enterprise methods technical services and software

### Entrepreneurial Service and Support and Other Companies – 18

- **Siemens Industries, Inc**
- Stahl Engineering & Failure Analysis, LLC





# ACHIEVEMENTS in the SPOTLIGHT



### In State FY 2009/2010 ...

• Total Park Payroll .....	\$8.1 Million
• Total Park Client Revenue .....	\$10.3 Million
• Average Annual Wage (Park) .....	\$52,875 <small>(39% better than Benchmark Average)</small>
• Average Annual Wage (All) .....	\$60,975 <small>(60% better than Benchmark Average)</small>
• Non-revenue-producing companies .....	34% <small>(38% in 2009)</small>

### Since Inception ...

• Patents (granted or pending) .....	90
• New products launched .....	229
• Jobs created (cumulative) .....	458
• Percentage of clients staying within 30 miles of our service area .....	99.1%
• Survivability rate .....	91.8%
• Payroll CAGR Rate .....	81.5%
• Client Employment CAGR rate .....	55.5%
• Client Revenue CAGR Rate .....	79.0%
• Total Payroll Taxes (clients & graduates) .....	\$2.5 MM

**Local jobs created for each job created in a research park: 2.57**

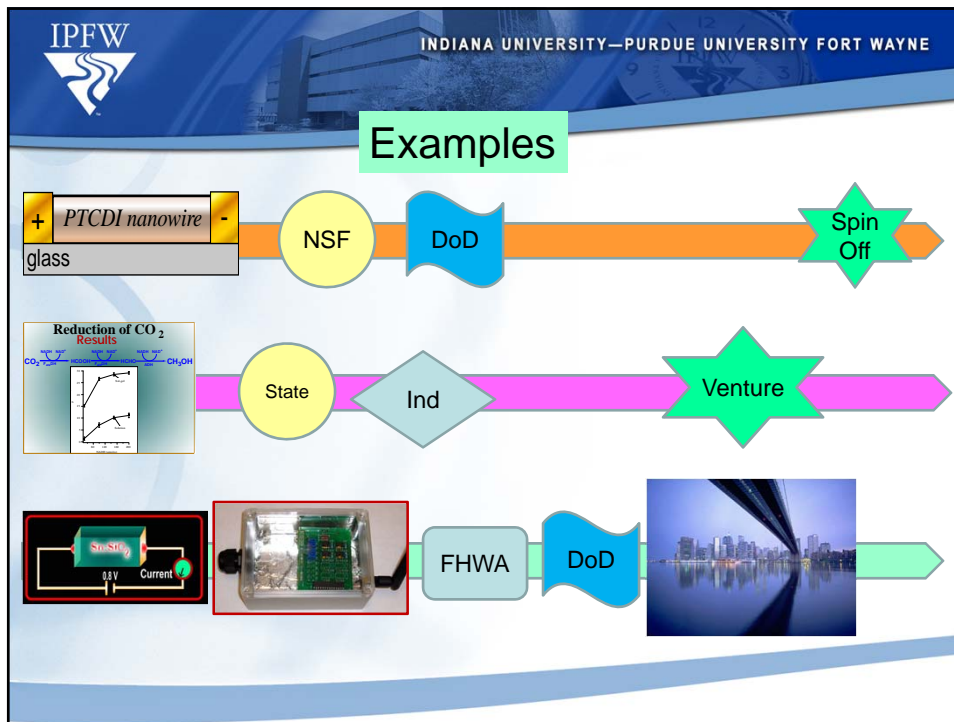
— Battelle Study, 10/07



## Venturers, Investors, Patent Services

- Ruffalo & Benson LLC
- Baker and Daniels
- Huron Group
- Chase Bank
- Lincoln Financial Group
- Bank of America
- Wells Fargo
- Independent Venture Firms
- Innovation Centers (NIIC, PU Discovery Park)





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## GATTE Purposes/Priorities

1. It makes an international market for intellectual property.
2. It engages international business and educational resources in the commercialization of international IP.
3. It helps member universities and incubators throughout the world to form new companies to commercialize international IP in their locales





## GATTE Structure, Governance, and Operation

### □ Structure

- ✓ A program jointly operated by the Northeast Indiana Innovation Center (NIIC), and the IPFW College of Engineering, Technology, and Computer Science (ETCS)
- ✓ Engaging universities and incubators, throughout the world, who will be interested in reciprocal technology/commercialization transactions and exchanges



## GATTE Structure, Governance, and Operation

### □ Operation

- ✓ Under the direction of NIIC's President and CEO, in close cooperation with the Dean of IPFW's ETCS
- ### □ Advisory Committee: representatives from
- ✓ IPFW, Foreign universities, IURTC, Purdue Technology Transfer, the City of Fort Wayne, Allen County, the Northeast Indiana Regional Partnership, LEDOs from throughout Northeast Indiana, Elevate Ventures, and selected business and cultural leaders throughout Northeast Indiana





### GATTE Structure, Governance, and Operation

- ❑ Will establish a visiting professor and executive exchange program throughout the world
- ❑ Will establish employ interns from IPFW and participating international universities to supplement NIIC's student exchange program



### GATTE Related NE Indiana Institutions and Their Services

- ❑ IPFW – for intern, faculty consulting, lab facilities support, Office of Engagement technology transfer support
- ❑ NIIC – for incubator office and lab space
- ❑ NIIC LEAP Fund, Elevate Ventures, and other venture or angel groups - for capital
- ❑ Regional economic development agencies – for expansion space
- ❑ Local service providers (banks, accountants, attorneys, marketing agencies) as necessary





### Portfolio of Programs/Services Six Revenue-Producing Services

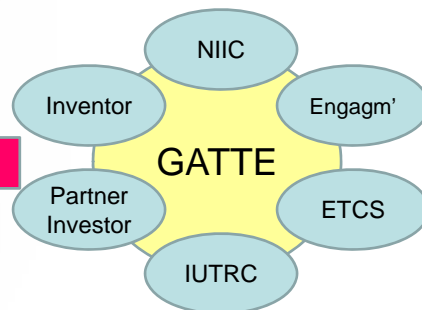
1. List/inventory IP available to license
2. List/broker entities interested in licensing IP
3. Soft Landings program to help international entities from a U.S. company
4. Soft Landings program to help local international students starts a company
5. Annual Global Showcase and Conference
6. Licensing Agency (TTO/TLO) for International Entities



### Roadmap for a Global Technology Transfer Water Jet Project Taiwan-Indiana



- Initiate Inquiry and Develop First Refusal Right
- Submit Business/Marketing Plan
- On-site Visit
- Develop Partnership and Legal Binding Document
- Preliminary Phase – “Loan” Marketing and Capacity Estimation
- Disclose Supply Chains
- Full Scale Operation
- Develop Tech Support



Option Clause  
Due Diligence

Partners Licensor  
Joint Venture

Stock Option  
Equity Royalty

Distribution  
Template mediator



## The GATTE Members in Taiwan

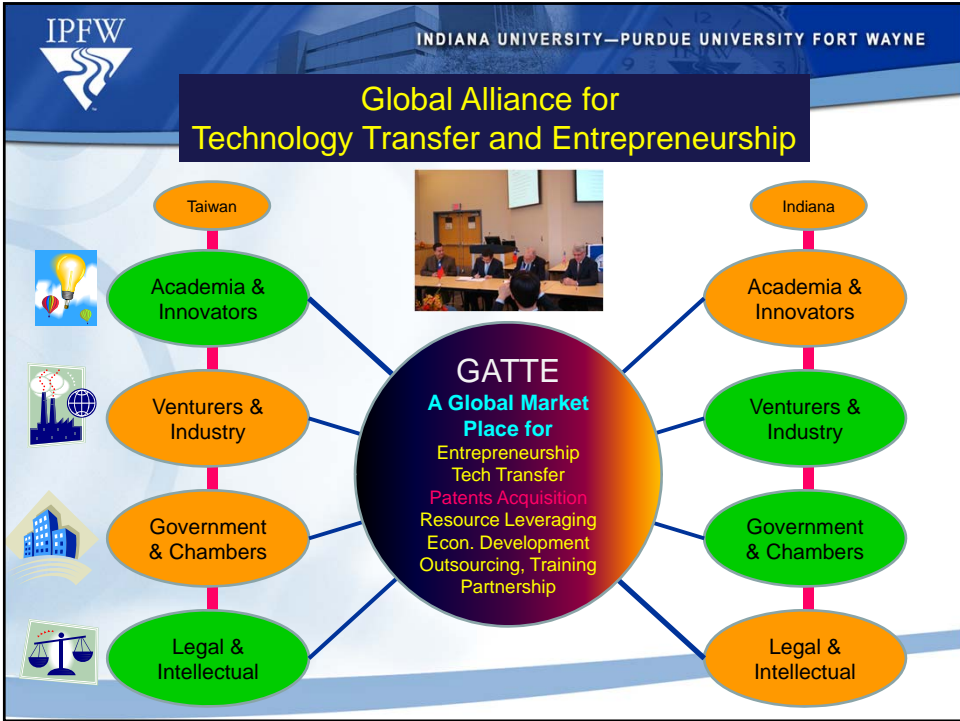
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## Summary

- Technology Innovation Requires Developing a Roadmap for Product Development and Commercialization at the Inception Stage; Analogous to the Concept of Virtual Prototyping or Can be Referred to As Virtual Systems Engineering
- The Best Practices of Technology Innovation, Commercialization, and Entrepreneurship Requires a Team Approach from the Very Beginning; Partnership, Trust, Communication, Marketing, and Ability to Harvest Resources are the Keys to Success; Analogous to Concurrent Engineering
- The Role of Academia and Researchers is to Continue Pursuing Innovative Ideas/Technology and Let the Entrepreneurs, Industry, and Economic Development Sector to make it happened
- A Global Common Market Place for Intellectual Properties, Entrepreneurship, Economic Development, and Resource Leveraging is Needed; Go GATTE





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# Thank You!

# Questions?