

PENNS STATE

Higher Education and Economic Development:

Advancing a Workforce Development Strategy to Support Economic Development

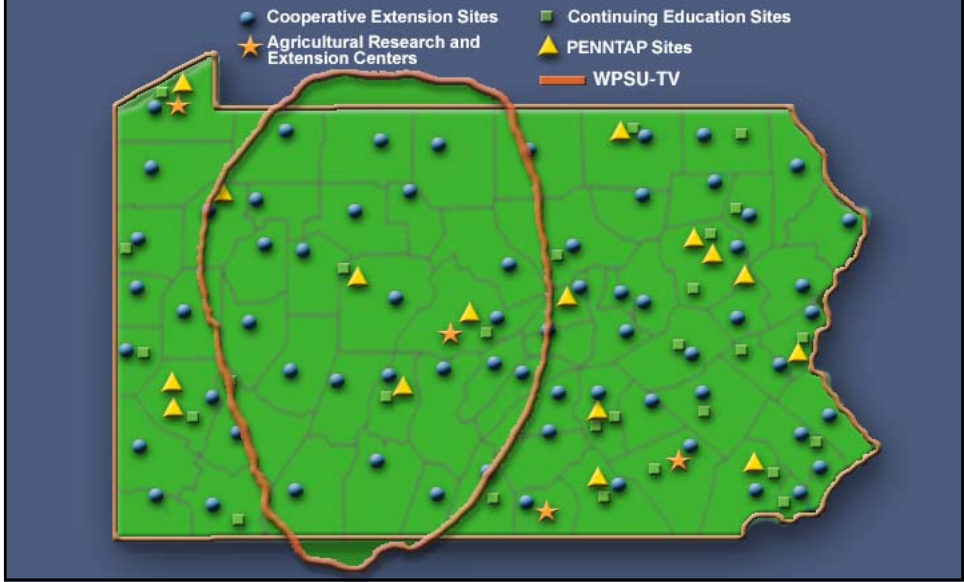
Craig Weidemann
Penn State University

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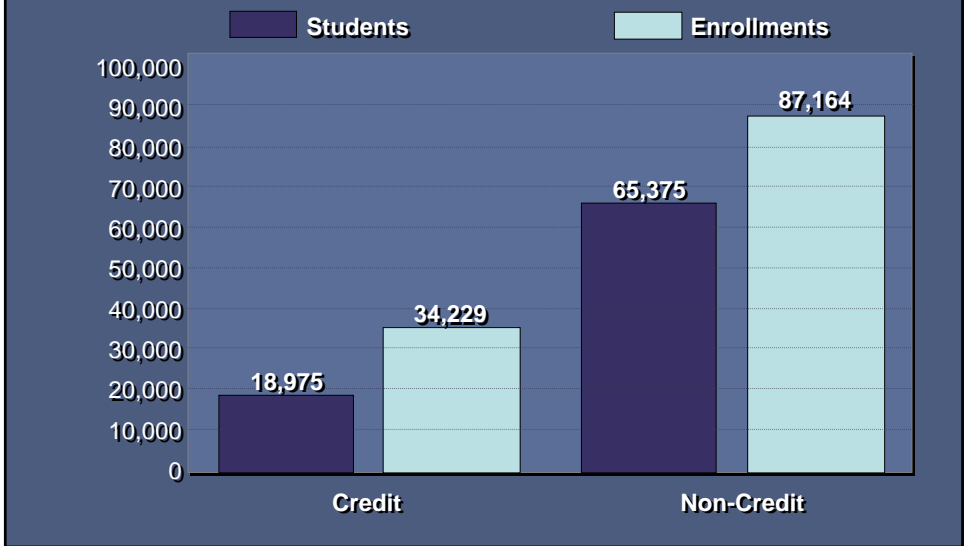
Penn State Outreach Today

- Reaching One in Four Pennsylvania Households
- 67 Counties, 50 States, 82 Countries, 7 Continents
- 2,000 Programs
- 267,000 Youth
- 1,500 Faculty
- Public Broadcasting
 - 1.3 Million Television Households
 - 500,000 Radio Listeners

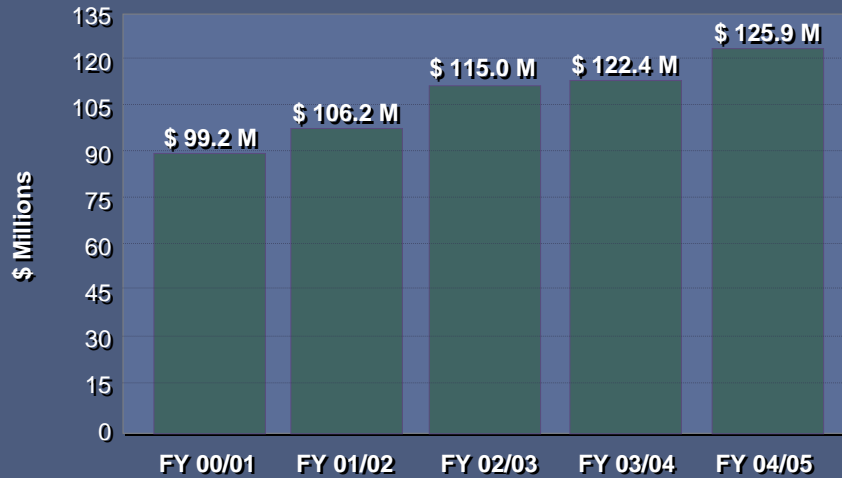
Outreach in Pennsylvania



Continuing & Distance Education Enrollments 04/05 All Campuses



Total Outreach Income



At their foundation, economic development, workforce development, and community development are fundamentally intertwined and connected—you cannot consider developing one area without inclusion of the other two.

Art Heim
Delta Corporation

- PENNSSTATE
- Key workforce trends
 - Higher education's role in economic development
 - Ten CE strategies to support economic and workforce development

The global competitive playing field is being leveled.

The world is being flattened.

Thomas Friedman
The World Is Flat

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Key Workforce Trends

U.S. labor force will become older, more racially and ethnically diverse

- Baby boom generation ages → workers age 55+ will make up 20% of workforce by 2020
- Minority portion of workforce will double between 1980 and 2020

Sources: U. S. General Accounting Office, *Workforce Challenges and Opportunities for the 21st Century*, 2004; National Center for Public Policy and Higher Education, 2005.

Key Workforce Trends

Least educated racial/ethnic groups are fastest growing segment of workforce

- Growth in workforce is occurring among those racial/ethnic groups with the lowest level of education
- Gaps among racial/ethnic groups in levels of education completed are widening

Source: National Center for Higher Education Management Systems. *As America Becomes More Diverse: The Impact of State Higher Education Inequality*, 2005.

Key Workforce Trends

U.S. pipeline of talent is being challenged

- Half of U.S. scientists and engineers are 40+
- Asian universities produce 8 times as many bachelor's degrees as U.S.
- Slowing international talent stream

Friedman, Thomas. *The World Is Flat*, 2005; Institute of International Education. *Open Doors 2005*.

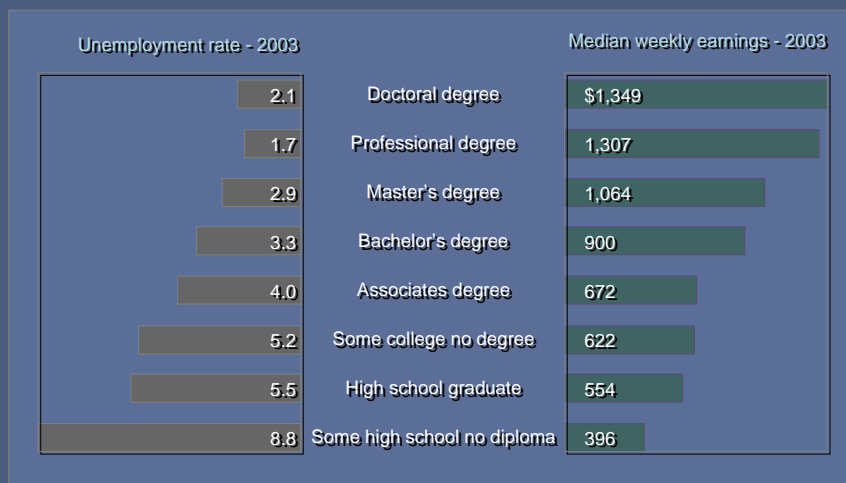
Key Workforce Trends

Post-secondary education and training now required for increasing percentage of jobs

- 80% of the fastest-growing jobs in the United States require some postsecondary education

Source: U.S. Bureau of Labor Statistics

Education Pays and Keeps You Employed



Unemployment and Earnings - full-time workers over 25

Source: Bureau of Labor Statistics

Educational Attainment:

Increasing the Number of College Grads Has Economic Development Benefits

Percent of Population 25 Years+ with Bachelor's Degree or Higher

Highest	Lowest
1. Massachusetts	1. West Virginia
2. Colorado	2. Arkansas
3. New Hampshire	3. Mississippi
4. Maryland	4. Kentucky
5. New Jersey	5. Indiana
6. Connecticut	6. Alabama
7. Vermont	7. Louisiana
8. Virginia	8. Wyoming
9. Minnesota	9. Oklahoma
10. California	10. North Carolina

U.S. Census Bureau, Current Population Survey, March 2005; Bartik, Timothy.
Increasing the Economic Development Benefits of Higher Education in Michigan, 2004

States Competing Economically Based on Educational Attainment Rates

- Education will be worth more in future to both individual and region/state
- Educational attainment is competitive differentiator for states in attracting economic development opportunities
- More \$ for adult learners
 - Pennsylvania's WAGE funding

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Higher Education Fuels Economic Engine

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the UC Discovery Grant
Success is a great investment
News & Events
Events
News
- archives
Video Clips
Event Videos

Colleges understand their role in reviving Michigan's economy
By Daniel Howes / The Detroit News
Sunday, October 9, 2005
Mary Sue Coleman is torn. "If I were a worker and made a great salary with good benefits, I'd be very disloyal to the state," she says. "We can't take the attitude of blaming people this is happening to them. We can't take the attitude of blaming people this is happening to them. We can't take the attitude of blaming people this is happening to them. Thousands of manufacturing jobs are being lost."

Outmigration 101: Can higher ed stem brain drain?
Tom Whelan
From the November 11, 2005 print edition
Mass. exit
After last year, Massachusetts can be reversed or if it is

Higher Education Helps Drive the Economy
By Richard C. Atkinson and Charles B. Reed
By Richard C. Atkinson and Charles B. Reed
Los Angeles Times
October 4, 2000
UC President Richard Atkinson

Revving up the state's economy with brainpower
By Jack Wilson
January 2, 2005
AT A TIME when Massachusetts faces a new employment and population

For a better economy, think public higher education
By Jack Wilson | May 28, 2005
AT A TIME when Massachusetts faces a new employment and population

Higher Education Raises Profile of Economic Development Efforts



Higher Education's Three Dimensions of Economic Development*

Colleges and Universities



Economic Impact



Human Capital Development



Innovation and New Knowledge Creation

*Paytas, Jerry; Gradeck, Robert; Andrews, Lena. Carnegie Mellon University, Center for Economic Development. *Universities and the Development of Industry Clusters*, 2004.

Economic Impact

Human Capital
Development

Innovation and
New Knowledge
Creation

Higher Education: Economic Impact

- U.S. postsecondary education market is \$320B
 - Education: targeted industry cluster in Pennsylvania
- Economic impact
 - Penn State → \$6.1B annually
 - University of Wisconsin System → \$9.5B
 - Johns Hopkins University → \$7B

Source: Legg Mason Wood Walker, Inc. Postsecondary Education Factbook, Fall 2005.
Economic impact studies released by institutions.

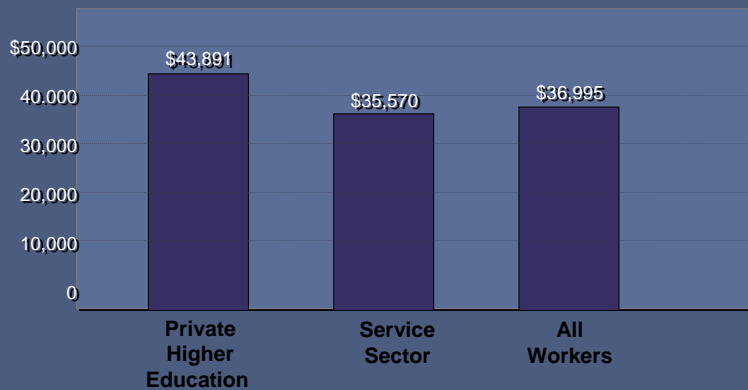
Economic Impact

Human Capital
Development

Innovation and
New Knowledge
Creation

Higher Education: Economic Impact

Average Annual Wage in Pennsylvania



Economic Impact

Human Capital
Development

Innovation and
New Knowledge
Creation

Higher Education: Human Capital

An educated, innovative workforce—human capital—is the most precious resource of any country in this new, flat world.

National Academy of Sciences
Rising Above the Gathering Storm:
Energizing and Employing America
for a Brighter Economic Future

Economic Impact

Human Capital
Development

Innovation and
New Knowledge
Creation

Internships/Service Learning

- Convert the “brain drain” to a “brain gain”
 - If a student who is not originally from the region interns locally during their college career he or she is twice as likely to remain in Philadelphia after graduation.
- Career Philly, Inc.
 - Internship-in-a-box

*Colleges and universities, the crown-jewels of America's
human capital economy*
Business Week

Source: Knowledge Industry Partnership. Should I Stay or Should I Go?, June 2004.

Entrepreneurship

- Colleges offering entrepreneurship courses
 - 1980: 300
 - 1990: 1,050
 - 2005: 1,600
- Extend entrepreneurship deeper into education pipeline

Entrepreneurship enhances the regional economic impact of investments in innovation.

The Innovation-Entrepreneurship Nexus

Workforce Training

- Educational attainment—traditional, nontraditional
- Executive/management development
- Public sector training
- Contract training

As the U.S. economy becomes even more reliant on workers with greater knowledge and technological expertise, the domestic supply of qualified workers is not keeping up with demand.

The Business Roundtable

Economic Impact

Human Capital
Development

Innovation and
New Knowledge
Creation

*The game is changing. It isn't just about math
and science anymore. It's about creativity,
imagination and, above all, INNOVATION.*

Business Week
August 1, 2005

Economic Impact

Human Capital
Development

Innovation and
New Knowledge
Creation

Technology Transfer and Universities

- 635 new technologies offered to public
- 16,871 invention disclosures
- 4,800 new licensed technologies
- 462 new companies based on academic research

Sources: Association of University Technology Managers; Council on Competitiveness
Innovate America, 2004.

Economic Impact

Human Capital
Development

Innovation and
New Knowledge
Creation

Venture Capital and University R&D Are Driving Launch and Location of High-Tech Employers

Top Ten Venture Capital States

1. California
2. Massachusetts
3. Texas
4. New Jersey
5. Georgia
6. Pennsylvania
7. Washington
8. New York
9. Colorado
10. North Carolina

Top Ten High-Tech Worker States

1. California
2. Texas
3. New York
4. Florida
5. Virginia
6. Massachusetts
7. Illinois
8. Pennsylvania
9. New Jersey
10. Michigan

Source: American Electronics Association; Moran, Stahl, & Boyer LLC

- Key workforce trends
- Higher education's role in economic development
- Ten CE strategies to support economic and workforce development

*The global competitive playing field is being leveled.
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Ten CE Strategies to Support Economic and Workforce Development

Number 1 - Innovate, Innovate, Innovate

- Focus on innovation externally as programming area
- Focus on innovation internally as a key management process

Innovation is coming up with ideas and bringing them to life.

Robert B. Tucker
Driving Growth Through Innovation

Number 1 - Innovate, Innovate, Innovate

	Industry	Higher Education
Product		
Process		
Strategies	 Made to order model	

Where Does Innovation Come From?



Number 2 - Broaden Your View of ROI and Role of CE in Economic Development

- Build holistic partnerships selling all University products and services including internships
- Consider all means to advance institution's role in economic development
- It's not just about "butts in seats"

	Innovate America Council on Competitiveness	Rising Above the Gathering Storm National Academies	TechNet Innovation Initiative TechNet	Leading Competitive Advantage AEA	Tech. Industry at an Innovation Crossroads Electronic Industries Alliance	Tipping America's Potential Business Roundtable	Computational Science: Erasing America's Competitiveness PITAG	Sustaining the Nation's Innovation Ecosystems PCAST	Choose to Compete Technology CEO Council
Build base of science, math & engineering graduates students	✓	✓	✓			✓		✓	
Raise K-12 math & science performance	✓	✓	✓	✓	✓	✓		✓	
Support multi-disciplinary study & teach innovation entrepreneurship	✓						✓		
Reform visa policies to attract and retain talent	✓	✓	✓	✓	✓	✓			
Strengthen workforce assistance & training	✓	✓	✓	✓	✓			✓	
Revitalize/reallocate federal R&D portfolio	✓	✓	✓	✓	✓	✓	✓	✓	
Support regional innovation "hot spots"	✓								
Increase availability of risk capital and reinforce risk-taking	✓		✓	✓				✓	
Establish a federal strategy for innovation-led growth	✓	✓		✓			✓	✓	
Modernize intellectual property regime	✓	✓		✓	✓				
Strengthen US manufacturing capacity	✓				✓			✓	
Build critical infrastructures -- e.g. health, energy, broadband, etc.	✓	✓	✓	✓	✓		✓	✓	
Further liberalize and enforce global trade rules			✓	✓	✓			✓	

Innovation will determine America's success through the 21st century.

TALENT

- Build the Base of **Scientists and Engineers**
- Catalyze the **Next Generation of American Innovators**
- Empower **Workers** to Succeed in the Global Economy

INVESTMENT

- Revitalize **Frontier and Multidisciplinary Research**
- Energize the **Entrepreneurial Economy**
- Reinforce **Risk-Taking** and **Long-Term Investment**

INFRASTRUCTURE

- Create a **21st Century Intellectual Property Regime**
- Strengthen America's **Manufacturing Capacity**
- Build **21st Century Innovation Infrastructures**

Source: Council on Competitiveness. Innovate America, December 2004.

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**Number 3 - Bring Full University
Participation in Economic Development**

- Create internal corporate or external partnership boards
- Build partnerships with other outreach administrative units
- Focus programs on colleagues'/campus priorities
- Consider contacts, expertise of your faculty
- Promote your work shamelessly...assume leadership role

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**Number 4 - Build External Coalitions:
Convene, Connect, Collaborate**

- Convene meetings, summits, task forces
- Build collaborations with other institutions
- Get at the table OR
- Create a table: build social capital
- Use alums

Eighty percent of success is showing up.

Woody Allen

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**Number 5 -
Focus,
Focus,
Focus**

WHAT YOU ARE DEEPLY **PASSIONATE ABOUT**

WHAT YOU **CAN BE THE BEST IN THE WORLD AT**

WHAT DRIVES YOUR **ECONOMIC ENGINE**

INNOVATION

Collins, J. (2001). Good to Great. Page 96

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**Number 5 -
Focus,
Focus,
Focus**

WHAT YOU ARE DEEPLY **PASSIONATE ABOUT**

WHAT YOU **CAN BE THE BEST IN THE WORLD AT**

WHAT DRIVES YOUR **RESOURCE ENGINE**


INNOVATION

Collins, J. (2001). Good to Great. Page 96

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Number 5 - Focus, Focus, Focus

- Defining “Great”
- First Who...Then What
- Determine Hedgehog Concept
- Know when to say NO
- Confront the Brutal Facts



The image shows the cover of the book 'Good to Great and the Social Sectors' by Jim Collins. The cover is red with white text. At the top, it says 'WHY BUSINESS THINKING IS NOT THE ANSWER'. Below that, the title 'GOOD TO GREAT AND THE SOCIAL SECTORS' is prominently displayed. Underneath the title, it reads 'A Manifesto for Ambitious Social Impact'. At the bottom, the author's name 'JIM COLLINS' is visible, along with a small circular logo containing the number 1.

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Number 6 - Align programming with regional/state industry clusters

- Evaluate and build programs/efforts where your competencies comport with regional industry priorities

PENNSYLVANIA PLASTICS INITIATIVE

- Integrates workforce, economic development, and educational resources to comprehensively address needs of a targeted industry
- Partners
 - State and local WIBs
 - Penn College of Technology
 - Statewide system of industrial resource centers
 - Ben Franklin Technology Partners
 - Penn State
- Purpose
 - Operationalize statewide network that supports every facet of the industry's development

Number 7 - Know Where the Money Is

- Know your funding sources
- Be at the table where funding decisions are made
- Build a fundraising capability
- Build relationships with people who have access to money

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Number 8 - Use Technology Accelerators

- Viral marketing
- Online registration
- CRM
- Podcasting

Good to great companies use technology as an accelerator of momentum, not a creator of it.

Jim Collins
Good to Great

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Number 9 - Listen to (and lead) the Market

- Be customer-centric
- Build trust
- Build curriculum development and needs assessment capability
- Lose the arrogance
- Build on CE's environmental scanning capability

As in all engagement activities, the fundamental building block and key success factor is mutual trust among partners.

Freeman A. Hrabowski
President, UMBC

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**Number 10 - There is no silver bullet—
But Lead!**

- Lead wherever you are in the organization
- Build on CE's innovation capability
- Execute!


*Strategy gets you on the playing field, but
execution pays the bills.*

Gordon Eubanks
Oblix, Inc.

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**"I'll do whatever we need to
do...We need to make it
happen."**

Roger Clemens

A photograph of Roger Clemens, a professional baseball pitcher, wearing a white Houston Astros uniform with the number 22. He is wearing a dark cap with a star and is captured in a moment of intense emotion, with his mouth open as if shouting or celebrating. The background is blurred, suggesting a stadium setting.

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Higher Education and Economic Development:

Advancing a Workforce Development Strategy
to Support Economic Development

Craig Weidemann
Penn State University

<http://www.outreach.psu.edu/weidemann/speeches.asp>