INNOVATION DRIVES GROWTH

Investing in the Innovation Economy

David A. Paterson
Governor

Ed Reinfurt
Executive Director
“No matter how talented an individual may be, no matter how much energy he might possess, regardless of how much integrity and honesty he or she may have, if that person is alone, they can accomplish very little.”

*Robert F. Kennedy 1964*
NYSTAR’s Mission: Advancing the Innovation Economy

- Help new and existing New York businesses become more competitive through use of innovative technologies
- Continue to leverage public and private partnerships for technology development and commercialization
- Enhance the research capabilities and expertise of New York’s colleges, universities and research institutions
- Support efforts to ensure a skilled workforce including exciting youth about science and technology
- Recommend policies to take greater advantage of New York’s technology and academic research assets
NYSTAR Investments for the Innovation Economy
(Jan 2000 to May 2007)

- Applied Research: $188 million
- Faculty Recruitment and Retention: $36 million
- Technology Transfer and Commercialization Incentives: $101 million
- Frontier Science: $153 million

Total awarded $478 million
An Innovation Economy

• Transition of our Economy
  • Tough to see
  • Tougher to appreciate

• Transformation of our Economy
  • Now being seen
  • Much to appreciate
Transformation of RPI

**Biotechnology**

*Center for Biotechnology and Interdisciplinary Studies*

Protecting the Hudson River

**Energy and the Environment**

**Nanotechnology**

Carbon Nanotubes
Transformation of RPI

**Computation and Information Technology**

![Supercomputer](image1)

Computational Center for Innovation (CCNI) Supercomputer

**Media and The Arts**

![Experimental Media and Performing Arts Center (EMPAC)](image2)

Experimental Media and Performing Arts Center (EMPAC)
Beacon Institute

“We are investing in a world class institute solving real world problems leveraging the many assets of RPI.”

*Governor David Paterson*

“Our area owes its very history to the Hudson River and this is the biggest step we have ever taken to give back to ensure the future health of the river and its ecosystems.”

*Senator Joseph Bruno*

“The Center will combine the technology platforms and scientific expertise of Rensselaer and the Beacon Institute with the dedication of our leadership in government to make Troy a global hub for water-based environmental research.”

*Shirley Jackson, RPI President*
Buffalo

Life Sciences Center
400,000 sq foot collaborative between Univ at Buffalo, Roswell Park and Hauptman-Woodward

“It's going to take hard work. More of it. And determined and persistent people. It's going to take commitment. More of it. Not just from a few, but from the whole community. But it's happening. And it's happening because the time is now for Buffalo Niagara.”
- Buffalo Niagara Enterprise, 2006-07 Annual Report

Corning

Corning Celebrates Sullivan Park $300M Expansion
Corning Press Release, Nov 13, 2007

Expansion of R&D facility creates 300 new jobs and protects 1,500
Transformational Investments in New York’s Innovation Economy

**Syracuse**

**Bitzer Scroll to Create 300 Jobs in Syracuse**
*The Post Standard, Feb 21, 2008*
First product designed and made outside Germany

**Welch Allyn to Create Innovation Incubator**
*Welch Allyn Press Release, Jan 8, 2008*
WA will also break ground on a $30 million expansion that will add 175 workers to its 1,125 employees

**$56M Renovation for Syracuse Near West Side**
*The Post Standard, Sep 21, 2007*

**Rochester**

**UR President Sets Lofty Goals**
*Democrat and Chronicle, Jan 25, 2008*
“I envision a University of Rochester that within 10 years is unequivocally one of the 20 most outstanding research universities in the US” – President Joel Seligman
Transformational Investments in New York’s Innovation Economy

New York City and Long Island

$35 Million Center to Find Cheaper Ways to Use Sun’s Energy
Long Island Business News, Sep 24, 2007

Stony Brook & Brookhaven National Lab Unveil New York Blue Supercomputer
Supercomputing Online, June 15, 2007
One of the world’s fastest supercomputers

Bringing Lab Space Back to New York City
East River Science Park will be a $700M complex with 1.1 million square feet of labs and office space
Positioning New York State in the Global Innovation Economy

• Where is New York today?

• Where do we need to go?

• How do we best position our regions to thrive in the global innovation economy?
If global competition was a technology driven card game, “you want the hand America’s been dealt”

Sam Palmisano, July 25, 2007
Chief Executive Officer, IBM Corporation
Ranking National Innovative Capacity

2007 INSEAD Global Innovation Index vs. 2006 GDP per Capita (adjusted for purchasing power parity)


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U.S. Leads in High-Expectation Entrepreneurship

- United States
- Australia and New Zealand
- Latin America
- Developing Asia
- Africa
- United Kingdom
- Germany
- Europe and Israel
- Developed Asia

Source: Global Entrepreneurship Monitor and The Council on Competitiveness
2008 State New Economy Index

Prepared by The Information Technology and Innovation Foundation and the Kauffman Foundation.

Examined 26 indicators within five categories to assess the state of the new economy:

1. Knowledge Jobs (employment)
2. Globalization (exporting)
3. Economic Dynamism (competitiveness indicators)
4. Transformation to a digital economy (on-line usage)
5. Technological innovation capacity (employment in technology-producing industries, patents, R&D, VC)
1. Massachusetts  
2. New Jersey  
3. Maryland  
4. Washington  
5. California  
6. Connecticut  
7. Delaware  
8. Virginia  
9. Colorado  
10. New York

Source: 2007 State New Economy Index
2007 State New Economy Index Indicator: "Gazelle" Jobs

% of Concentration of Gazelle Jobs by Region (NYS DOL, Dec 2007):

- New York City: 8.1%
- Long Island: 7.5%
- Finger Lakes: 7.3%
- Western NY: 6.7%
- Hudson Valley: 6.5%
- Central NY: 6.0%
- Mohawk Valley: 5.8%
- Capital District: 5.6%
- North Country: 5.4%
- Southern Tier: 5.3%

New York is 3rd
Old Economy Strategy:
Relentlessly drive down costs and provide large incentives for locationally-mobile plants and offices.

New Economy Strategy:
Foster new entrepreneurial activities and help existing firms innovate and become more productive.
2008 State New Economy Index

Recommended Strategies

• Co-invest in an infrastructure for innovation
• Co-invest in workforce skills
• Cultivate entrepreneurship and support industry clusters
• Help companies be more innovative, develop new products and access new global markets
• Enhance role of colleges and universities in regional innovation and growth
“Quiet Crisis” in America – the threat to the capacity of the United States to innovate due to reduced support for research and looming shortage in the nation’s STEM workforce.

RPI President Shirley Jackson, Ph.D.
Positioning New York to Compete in the New Economy

New Knowledge

New Technology Examples:
- Nanomaterials & Nanoelectronics
- Immersion lithography
- Spintronics
- Wireless information transfer
- Cellulosic ethanol
- Genomics and proteomics
- Bioinformatics
- Supercomputers in Teraflop range

New and Redefined Industries:
- Semiconductors & Microelectronics
- Advanced Materials
- Alternative Energy
- Biomedical Devices & Pharmaceuticals
- Bio, Info, Nano, Finance, Entertainment

Economic Opportunity
NYSTAR’s Mission:
Advancing the Innovation Economy

NYSTAR’s initiatives include:

- Academic/industry R&D collaboration
- Capital Investment
- Recruitment and retention of leading researchers
- Technology transfer initiatives
- Early-stage equity fund
- Business outreach centers for emerging technologies and processes
New York State
Transformational Investments

Capital Facility Program: Established six state-of-the-art research facilities and acquisition of cutting-edge equipment at five institutions ($95 million through NYSTAR)

Centers of Excellence: Created six centers through new and renovated research facilities and equipment. Leverages other public and private investments projected at over $1 billion (funding through ESD)

Gen*NY*sis Centers (Generating Employment through NYS Science): Maximize world-class life sciences research potential at NY’s academic research institutions ($225 million through Dormitory Authority)
University Applied R&D Centers

- 15 university-based Centers for Advanced Technology and two college-based centers
- Technology areas including microelectronics, energy, life sciences, information technology, nanomaterials and imaging
- Work with industry to solve production and product development challenges
- Cited as a leading university-business initiative for technology development and commercialization
New York’s Investments are Technologically Diverse
The State’s commitment to collaborate globally with technology leaders and desire to work in concert with private industry in new fields of discovery.
NYSTAR Prioritization Sessions With New York Academy Of Sciences

Purpose:

• Focus NYSTAR’s and the State’s FUTURE Research Investments in Areas that have the Greatest Economic and Scientific Potential

• Insist on World Class Research as the Benchmark for Major Future Investments

• Build Off of Existing Economic and Scientific Strengths

• Identify New Opportunities Where We Can Be Market Leaders

• Leverage All Resources --- AND EXECUTE VIOLENTLY
Preliminary Assessment Of Areas Of Economic And Academic Strengths

- 1. Environmental Technology/Cleantech
- 2. Health Sciences (Biomedical + Healthcare Delivery)
- 3. Nanotech/Material Science
- 4. IT/HPC
New York’s and RPI’s Priorities

New York’s

- Environmental Technology/Cleantech
- Health Sciences
- Nanotech
- IT/HPC

RPI

- Energy & the Environment
- Biotechnology
- Nanotechnology
- Computation & Information Technology
- Media and the Arts
Leveraging Our Resources

1. Focus on Priorities
2. Invest in Priorities
3. Leverage All State Resources
4. Attract World Class Partners
5. Achieve Great Things
Challenge To CATS

1. Where Can You Make the Greatest Contribution to Our Shared Goals?

2. What Resources/Partners Have You Built Outside the University?

3. Are You Aggressively Marketing Your Expertise?

4. How Should We Measure Success?
1. We Applaud Technology Leaders

2. We Applaud Transformation Leaders

3. We Applaud Those Who Believe in our Future

4. We Applaud Those Who Are Driving the Agenda

5. We Applaud RPI!
INNOVATION DRIVES GROWTH

Edward Reinfurt
Executive Director

www.nystar.state.ny.us