Using the Pure Community Portal to Achieve Collaboration for Economic Development

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PART I:

Old Fashioned Innovation
vs.
Collaborative Innovation
Old Fashioned Innovation
The Romance of the Laboratory Tinkerer
The Romance of the Garage Tinkerer
The Historical “Lone” Inventor

The Lone Inventor builds products in a small garage or lab in home.
The Historical “Lone” Inventor

The Lone Inventor has all the tools, materials, and equipment to create products and services.
The Historical “Lone” Inventor

The Lone Inventor Works in secret or is isolated from the world.
The Historical “Lone” Inventor

The Lone Inventor is a rebel or disrupter of the establishment – they are not welcome in the marketplace!
The Historical “Lone” Inventor

The Lone Inventor is not formally educated – or needs little formal education. They fit the “Renaissance Man” ideal.
The Historical “Lone” Inventor

Once upon a time, novelty was seen as folly . . . People said: “it will never work” and “it can’t believe it’s possible.”

[Images of early automobiles and flying machines]
The Historical “Lone” Inventor

Some STEM disciplines commonly associated with this paradigm:

- Electricity and electromagnetism
- Biology and discovery of micro-organisms
- Mechanical appliances and tools
- Automobiles and aircraft
- Manufacturing machines and techniques
- Telephone and telegraph equipment
- Early personal computers
- Software and programming
Collaborative Innovation
Some STEM disciplines commonly associated with this paradigm:

- Biotechnology, Genetic Engineering & Pharmaceuticals
- Robotics and AI
- Aerospace & Defense Industry
- Advanced chemicals and synthetics
- Agritech
- Food processing
- Alternative forms of energy
- Environmental engineering
Collaborative inventors live in a society of great complexity and rapid change – scientific, technological, economic, and marketplace.
Collaborative inventors do not have access to all the costly tools, materials, and safe/sterile environments to invent.
The 21st Century “Collaborative” Inventor

Collaborative inventors must work with universities, commercial labs, and highly specialized experts.
The 21st Century “Collaborative” Inventor

Today, disruption is welcomed if not prized!
Today, novelty is taken for granted . . . People assume “of course it will work,” “of course it can be done,” “innovation is unlimited”
Collaborative inventors must be effective at harnessing many different types of "capitals" – intellectual, social, financial, cultural, industrial, and even political.
PART II:

ResearchwithNJ.com:
A Regional Model of Collaborative Innovation
How do we create *collaborative* innovation?

1. People + Relationships
2. Policy
3. Tools (e.g. databases)
Why New Jersey?

• Highly educated, highly skilled **workforce** including the highest concentration of scientists and engineers in the world.

• World class **infrastructure** with more than 2,800 miles of highway, a dozen commuter rail lines and 1,000 miles of freight line make it easy to move people and products throughout North America.

• **Older industrial cities** are now beginning to support an entirely new generation of entrepreneurs and innovators eager to utilize the infrastructure of warehouses and commercial structures.

• **Strategic location:** A business in central New Jersey can serve more than 22 million consumers, who collectively have $800 billion in disposable income and live within a 2 hour drive, and a perfect northeast location as major U.S. cities and financial/regulatory centers, including New York City and Washington D.C.
Challenges that Need to be Addressed in NJ:

• Large STEM corporations are looking to relocate in regions that have active collaboration between private sector and research universities.
• Some parts of the country have branded themselves very effectively as innovation centers, e.g. Silicon Valley.
• State government must take the lead in catalyzing innovation, partnerships, and the exchange of information.
• Industry is changing. Traditional forms of manufacturing, retail and even service jobs are disappearing. The modernization of industry and workforce is critical for economic growth.
• Conventional barriers or silos between institutions, experts, and funding/investment sources must be removed.
How will ResearchwithNJ.com foster economic development in NJ?

• Enables collaboration between businesses, universities and government
• Creates an ecosystem for innovation by facilitating joint-research, new products and services, businesses, and jobs
• Raises the profile of NJ’s research universities nationally and globally
• Connects “capitals” – knowledge, financial, workforce, social, equipment, etc.
• Provides public awareness about exciting STEM developments and advancements in new industries
What “research assets” are featured on ResearchwithNJ.com?

- Faculty bios and expert profiles
- Information about universities: programs, departments and specializations
- Publications and abstracts
- Equipment and laboratory technology
- Funding, awards and grants
- Intellectual property
- Events and conferences
- News, videos, and articles
- Jobs and professional development opportunities
The 21st Century “Collaborative” Inventor

Facilitating Institutions
NJEDA
State of New Jersey
Office of the Secretary of Higher Education
ELSEVIER

Research Universities
PRINCETON UNIVERSITY
NJIT
Rowan University
RUTGERS
STEVENS INSTITUTE OF TECHNOLOGY
MONTCLAIR STATE UNIVERSITY

Business & Industry Groups
NJBIA
BioNJ
HINJ
choose new jersey
R&D
NJ TECH COUNCIL
THE FUTURE STARTS HERE
Governance Structure for ResearchwithNJ

- Advisory Board
- Technical Committee
- Communications Committee
What does ResearchwithNJ.com look like?
What does ResearchwithNJ.com look like?
How will we measure performance?

Database Inventory and Scope

User Experience

Public Awareness and Marketing

Policy Outcomes
What types of research collaborations are we talking about?

**TECH INCUBATORS** - Home to 20 companies, five research centers and a business incubator, Rowan University’s South Jersey Technology Park represents the intersection of government, industry and the entrepreneurial community, with organizations tapping into University resources for innovation projects and applied research, often working with Rowan interns and full-time employees.

**DISTANCE LEARNING** - NJIT and IBM agreement for collaboration to deliver digital technologies and education through the university’s Martin Tuchman School of Management and its Business Analytics Lab. The partnership is intended to expand into professional certificate programs available. This will provide veterans, working professionals and other groups with a range of options to access new-collar training, credentials and degrees that are in high demand by employers.

**MEDICAL** - Since 2012, Stevens and Hackensack University Medical Center have partnered to offer biomedical educational programs to undergraduate and graduate students under a joint agreement. The two institutions also periodically offer cross-appointments of clinical and administrative staff at Stevens and faculty appointment at HackensackUMC.
What types of research collaborations are we talking about?

**AGRICULTURE** - Rutgers researchers are working with hops farmers across the state in a two-year program funded by a grant from the USDA Northeast Sustainable Agriculture Research and Education, to identify best practices for growing and analyzing crops to better serve the growing number of micro brewers in New Jersey.

**ENERGY** - Montclair State University and UMM Energy Partners, LLC formed a major public-private partnership and constructed a new combined heating, cooling, and power plant (CHCP) for the campus. In addition to the University’s new and efficient combined heat and power systems, the University generates electricity from its 285 kWdc solar field.

**PHYSICS** - Global Photonic Energy Corporation (GPEC)—a Ewing-based company that is engaged in the development of renewable energy technologies, with a particular emphasis on photovoltaic and hydrogen technology. GPEC has collaborated with Princeton University researchers on several projects, and in 2004 funded a prize that is awarded annually to the Princeton student doing the most innovative work in the field of solar energy.
Thank You.