



# AURP 2011 International Conference

Developing the Culture of Innovation and Entrepreneurship

November 30-December 2, 2011



New Orleans, LA



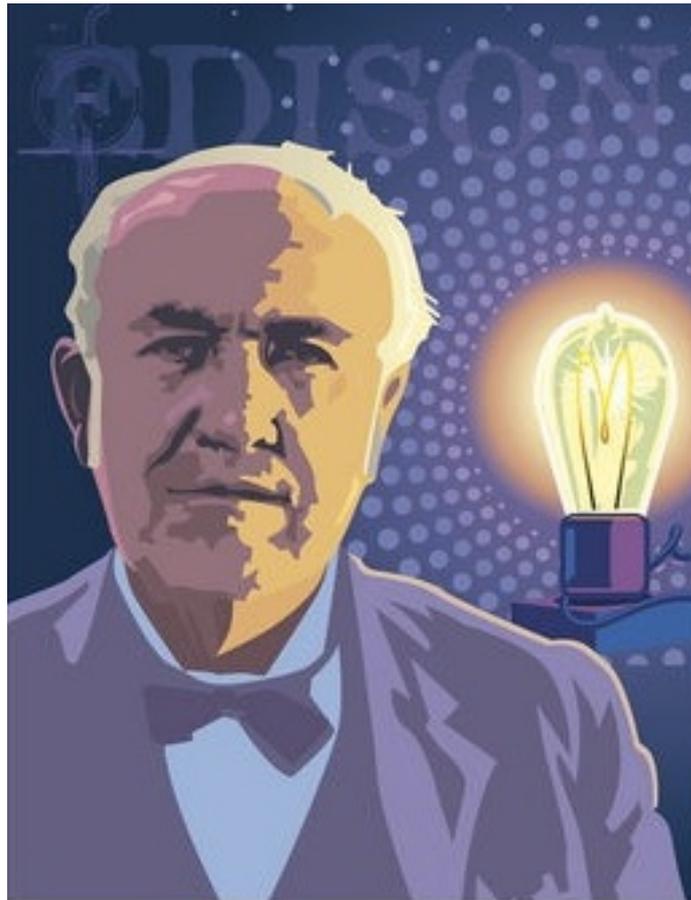
## *Creating Communities of Innovation & Entrepreneurship*



Presented by:  
Rich Bendis, President & CEO  
Innovation America  
Publisher, innovationDaily  
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New Orleans, LA

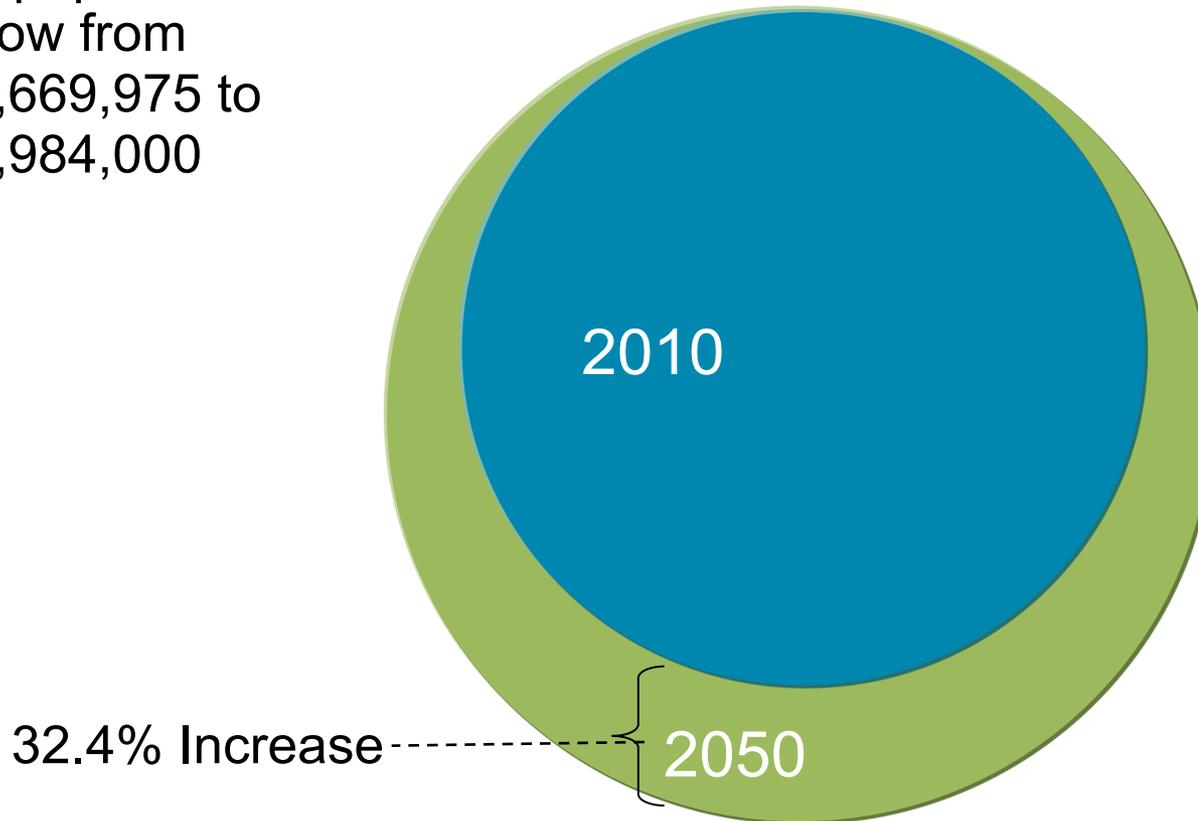
"There's a way to do it better—find it."

— Thomas Edison



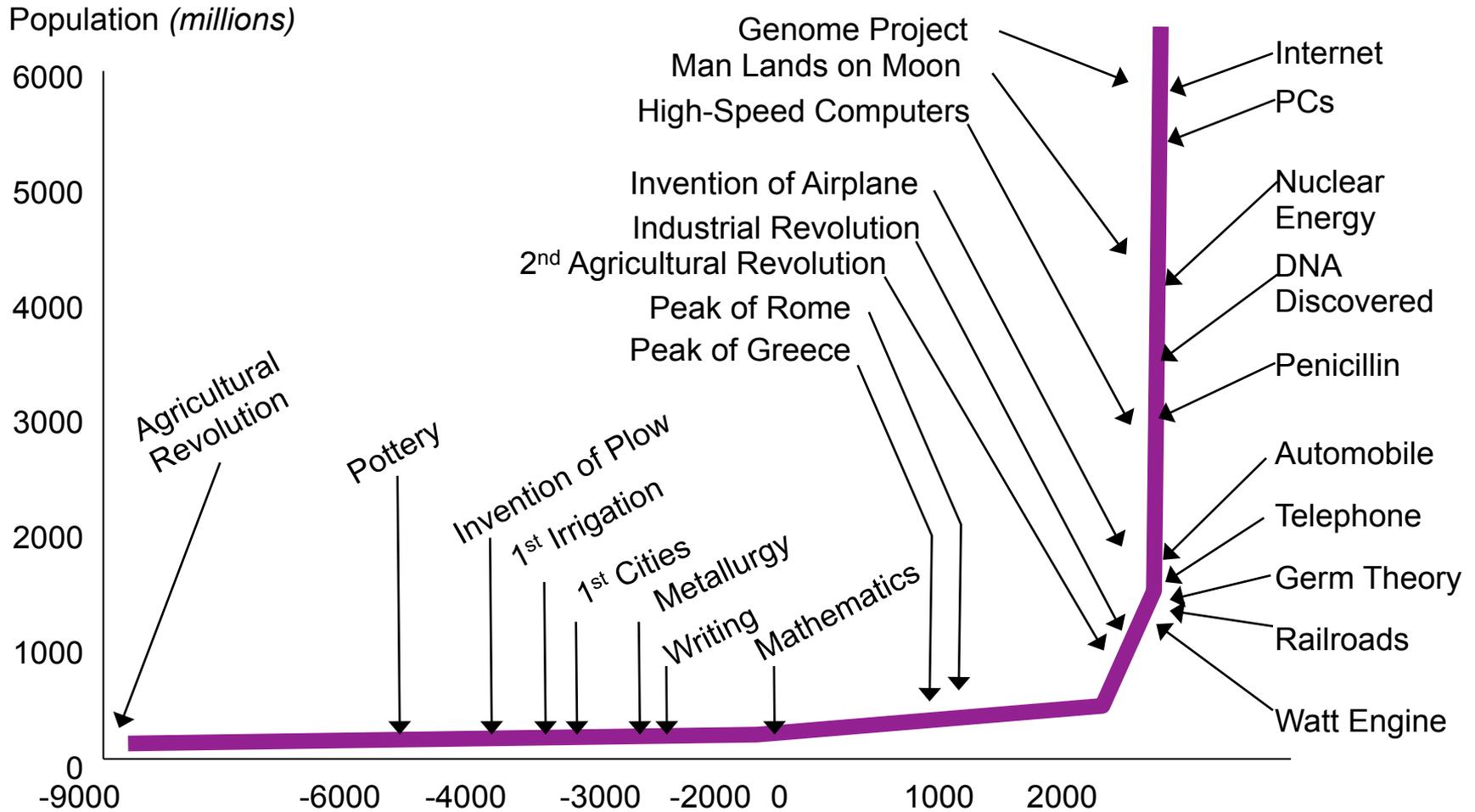
# A Growing Population

World population  
will grow from  
6,892,669,975 to  
9,149,984,000



Source: Scientific American, 2010

# Growth of World Population and the History of Technology



Source: Milken Institute, Robert Fogel/University of Chicago

# The Global Innovation Imperative

- Innovation is Key to Growing and Maintaining a Country's **Competitive** Position in the Global Economy and to address Global Challenges
- **Collaboration** among Small and Large Businesses, Universities, and **Research Parks** are Essential for Innovation & Commercialization
- **New Institutions and New Incentives**, are increasingly important to support collaboration and foster innovation
- Competitive advantages are increasingly tied to human capital and innovation
- **Economic growth** is closely related to education/workforce, energy, climate change, environmental, natural resource, geopolitical issues & entrepreneurship



**OPEN  
INNOVATION  
MATTERS**

# How Leading Regions Respond to the Innovation Imperative?

*They are providing four things:*

- High-level Focus
- Sustained Support for R&D: Leveraging Public and Private Funds
- Support for Innovative SMEs
- New Innovation **Partnerships** to bring new products and services to market



# Why Is Innovation Essential?

***“INNOVATION  
DISTINGUISHES  
BETWEEN A LEADER  
AND A FOLLOWER.”***

**-STEVE JOBS**



# Defining Innovation

**INNOVATION** is the creation and transformation of knowledge into new products, processes, and services that meet market need.....and interactions, entertainment forms, and ways of communicating and collaborating



# Open Innovation

***“Open innovation is a paradigm that assumes that firms can and should use external ideas as well as internal ideas, and internal and external paths to market, as the firms look to advance their technology.”***

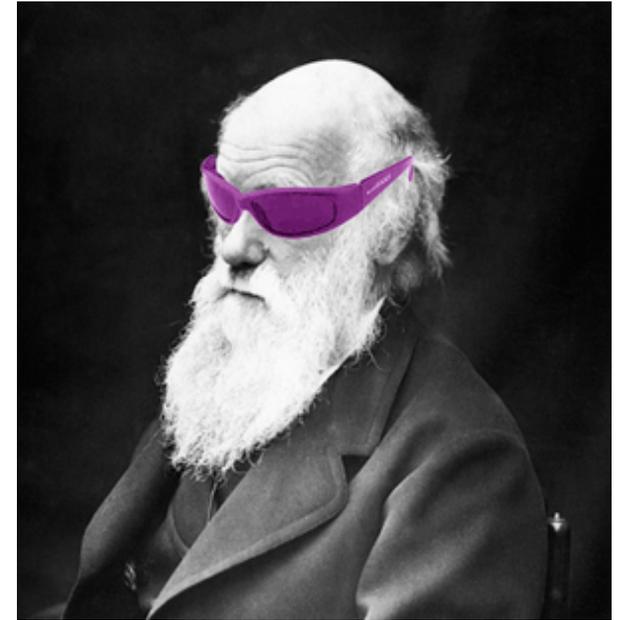
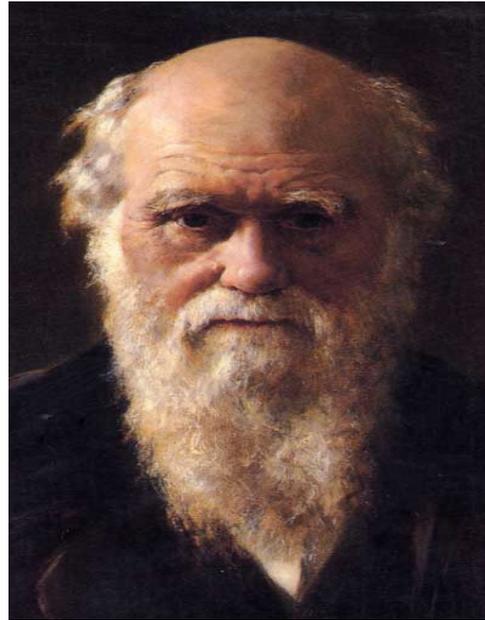
Henry Chesbrough



# Change Is Inevitable

“ It is not the strongest of species that survive, nor the most intelligent, but the ones most responsive to change.”

-Charles Darwin



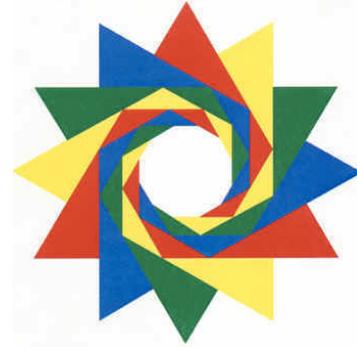
# The Six Driving Forces of Change

- Commoditization
- The Digital Revolution
- Social Mediaization throughout society
- Global Open Innovation
- The Turbulent World
- Acceleration (or running faster to stay in the same place)



# Implementing a New Innovation Paradigm

- Deviate from traditional perspectives
- Encourage public investment and risk taking
- Develop trust through collaboration
- Ensuring responsiveness to partners' missions
- Build consensus of all constituents through education, participation, and positive outcomes
- Move from Tech-Based Economic Development (TBED) to.....



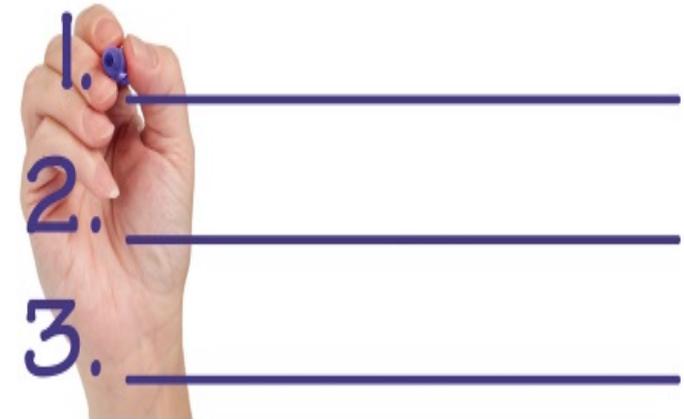
***Innovation-Based Economic Development (IBED)***

# Goals of Innovation-Based Economic Development

***Intervene at the margins of private sector investment flows of capital (financial and intellectual) to:***

- Address economic transition
- Capture the benefit of investments in research and development, higher education
- Build entrepreneurial cultures
- Help existing industries modernize
- Diversify both rural and urban economies
- Develop global innovation network

Goals



# Innovation Paradigm Shift

**PROOF OF CONCEPT**  
**(Technological Feasibility)**  
**“It Works!”**



The Historic  Garage  
invent

**PROOF OF COMMERCIAL RELEVANCE**  
**(Market Pull)**  
**“I’ll Buy It!”**



**CASH IS KING!**

# University Commercialization Centers

## THE GAP



### Academic Research

- Federal Grants
- Corporate Sponsored Research

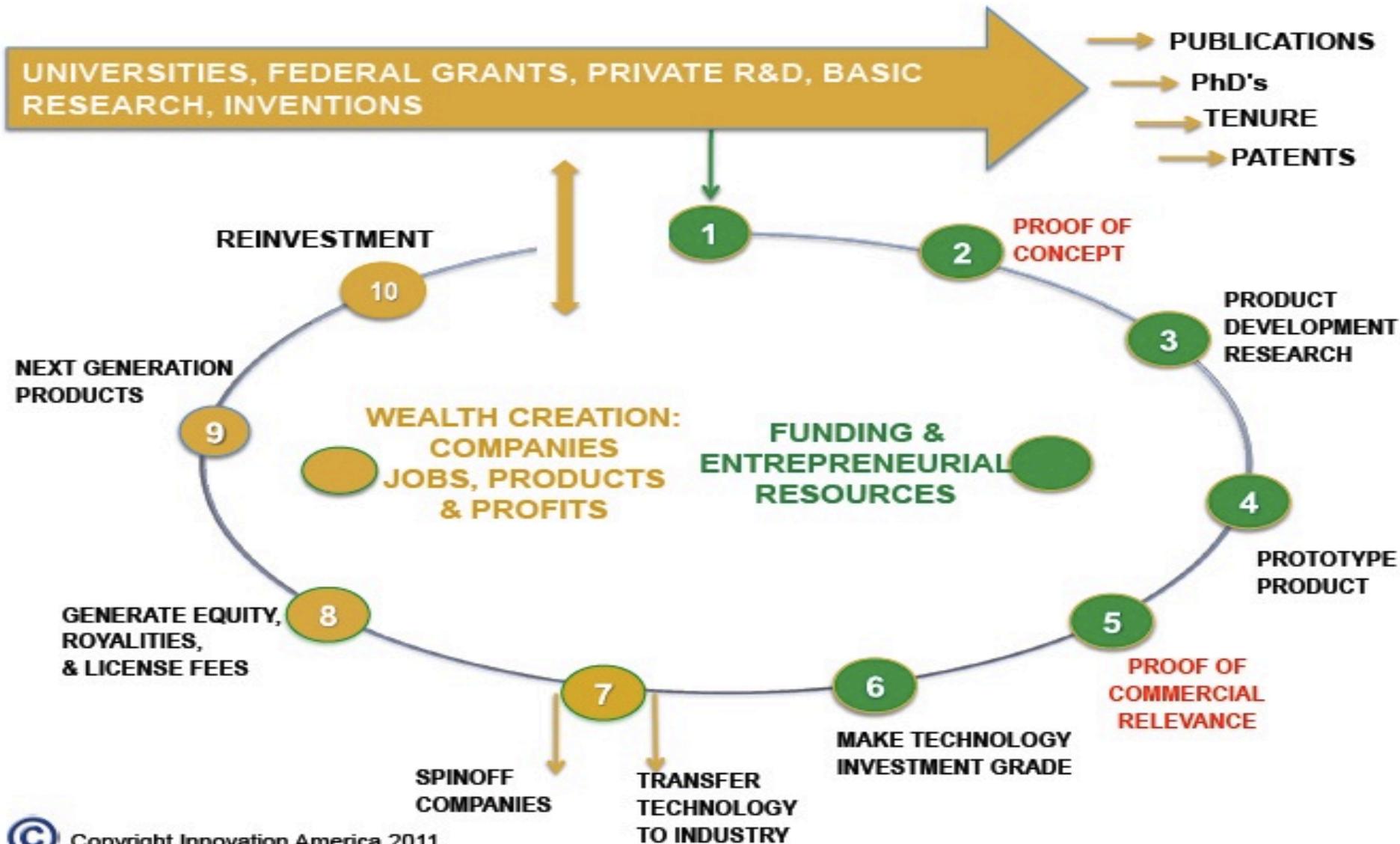


### Commercial Enterprise

- Investors Commercialize
- Angels
  - VC's
  - Corporations

- » Technology risk
- » Market risk

# Innovation America Commercialization Model



# 3 Components of a Science Park

1. A Real Estate Development
2. An organizational program of activities for technology transfer
3. A partnership between academic institutions, government and the private sector



# Few Facts About AURP & Science Parks 2011

- 1<sup>st</sup> Science Park - 1953 Stanford Science Park
- AURP established in 1986
- During the 80's research parks and technology incubators developed
- Prior to 1980 only a handful of such developments had been undertaken.
- Technology incubators in the U.S. were virtually nonexistent until the early 1980's, and now number in the hundreds, a large number of which are core elements of U.S. research parks
- AURP serves over 400 members around the world.
- Today there are more than 600 research parks globally



**ASSOCIATION OF  
UNIVERSITY  
RESEARCH  
PARKS**



# Challenges of Research Parks

## *What's Changed Since 2007 AURP/Battelle Study, "21<sup>st</sup> Century Directions?"*

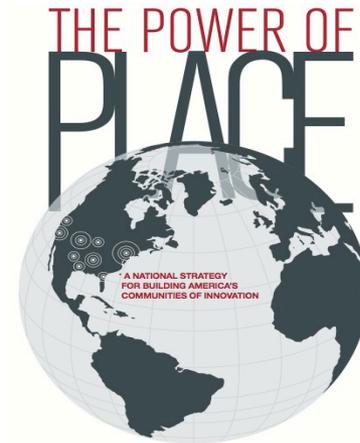
- Overcoming commercialization challenges
- Bridging cultural barriers between the academic & business communities & facilitating true partnerships
- Achieving integration with the university
- Obtaining funding for operations & buildings
- Responding to increased competition to globalization & the changing nature of corporate R&D



# Opportunities for Science Parks

## *What's Changed Since 2007 AURP/Battelle Study, "21<sup>st</sup> Century Directions?"*

- Financing & support for commercialization of IP
- Retention & attraction of talent & companies
- Speculative & surge space of development
- Ongoing financial support
- Urban community revitalization
- Performance & accountability
- Value-added tenant services



ASSOCIATION OF  
UNIVERSITY  
RESEARCH  
PARKS  
Creating Commercial Research



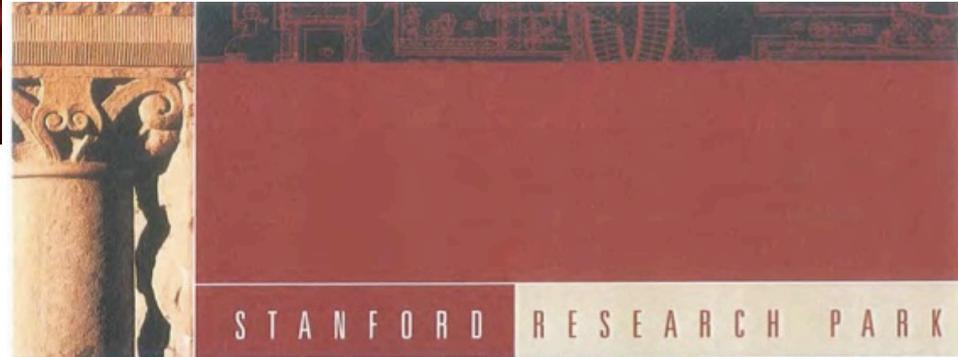
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UNIVERSITY  
RESEARCH  
PARKS

# Research Parks In the US

*Established as the 1<sup>st</sup> science park - 1953*

**PURDUE**  
RESEARCH PARK

**M**  
SQUARE  
UNIVERSITY OF  
**MARYLAND**  
RESEARCH PARK



**PIEDMONT TRIAD**  
RESEARCH PARK

 Los Alamos Research Park  
Your ideal location for R&D



  
QUÉBEC METRO  
**HIGH TECH PARK**

**Sc**  
science  
center

  
DELAWARE  
TECHNOLOGY  
PARK

  
THE RESEARCH  
TRIANGLE PARK

  
IOWA STATE UNIVERSITY  
RESEARCH PARK

Thad Cochran Research, Technology &  
Economic Development Park

**MISSISSIPPI STATE**  
UNIVERSITY

  
innovation  
AMERICA © 2011

# Science Center - Philadelphia

## The Science Center's Business Objective is to Advance Technology Commercialization and Entrepreneurship

- Deliver value to our research park residents, regional shareholders, stakeholders, and peer economic development organizations, including
  - Academic Innovators and Inventors
  - Entrepreneurs
  - Technology Transfer Offices
  - Life Science and High Tech Industries
  - Venture Funders
  - Professional Service Providers
  - Government (federal, state, and local)
  - Non-profit Economic and Community Development Organizations

We accomplish our objective through real estate development and innovative programs



## Our Objective is Being Fulfilled Through Three Key Initiatives and Three Community and Business Networks



Building a "Win, Win, Win, Win" for the University, Start-Up, Investor, and Regional Economy through Business Incubation.



Building a More Robust Entrepreneurial Community with a Clubhouse, Satellite Programming, and Online Network.



Creating the Nation's First Multi-Institutional Proof-of-Concept Program and Building Related Science & Technology Programs.



breadboard  
CREATIVE APPLICATIONS OF TECHNOLOGY

Community Access to  
Creative, "Game-changing"  
Technology



RAIN

Connector of  
Regional Research Park/  
Business Incubator Assets






University City Innovation Collaborative for  
"Making University City a World Class Innovation Center"



# University Research Park

- 255 Acres developed
- 36 Buildings; 1.5M sq. ft under roof
- \$160+ Million value
- \$3 Million per year in property taxes
- 114 Tenants with over 3,500 employees; average salary \$60K
- \$210 Million in annual payroll
- Metro Innovation Center just opened
- URP<sup>2</sup> being planned





# Wisconsin Alumni Research Foundation “WARF”

- Receives  $\approx$  400 disclosures annually; Accepts  $\approx$  65%
- Licenses  $\approx$  70 technologies annually (30% to WI companies)
- Provides  $\approx$  \$80 million to University annually
- Pays Royalties to 300+ UW-Madison researchers
- Holds equity in 40 UW Spin-offs



# Kansas Innovation & Commercialization Corps

**Investment Grade Technologies Development Risk**

*Innovation and Commercialization Corporations*  
 Independent 501(c)(3) not-for-profit  
 Independent Board of Directors  
 President with commercialization experience  
 For Profit Seed Capital Funds

**Start-up Company**

- Applied Research Project
- Innovation
- Development Risk
- Market Risk
- Management Risk
- Growth Risk

- Business Plan Consulting
- Financial Expertise
- Management & Operations Consulting
- Marketing & Sales Strategies
- Guidance in Accessing Financing
- Training
- Market Research
- Due Diligence
- Technical Review



**General Incubator Services**

**Quality Investments**

- Market Risk
- Seed Capital
- Market Risk
- Management Risk
- Growth Risk

# BMW Clemson Partnership



- Clemson University received \$10 million from BMW in 2002
- Clemson established \$1.5 billion automotive research and educational center
- Partnership created the curriculum for Clemson automotive graduate engineering school
- BMW provides internships for Clemson students



Clemson President Jim Barker and BMW Manufacturing President Helmut Leube try out the brand new Z4 roadster.

## BMW, Clemson and the State Begin Historic Partnership

Clemson, BMW Manufacturing Corp. and S.C. Gov. Jim Hodges announced in late September a partnership to build an automotive engineering graduate education center in Upstate South Carolina. The center will provide research support and engineers with advanced degrees needed by BMW, its suppliers and the state's growing automotive industry. BMW has pledged \$10 million to endow the academic programs, and the state will provide \$25 million to construct and equip a state-of-the-art facility to house the graduate center.

"With the support of BMW and the state of South Carolina, we will be able to build a premier automotive engineering program center," says Clemson President Jim Barker. "This partnership is a major step in Clemson's quest to be a top-20 public university and in South Carolina's drive to build a knowledge-based economy."

BMW also announced its plans to invest \$400 million in its Spartanburg factory to increase capacity by 20 percent, a move that will create 400 new jobs by the end of the year.

Hodges called the collaboration "one of the finest examples of higher education, government, training and business working together for the benefit of all."

The graduate center, to be built in Greenville, will feature state-of-the-art facilities for automotive research and



Barker, Leube and Gov. Jim Hodges at BMW's press conference.

development and graduate engineering programs in mass customization. It will offer master's and doctoral degrees in automotive engineering.

Clemson recently developed an academic strategic plan that calls for the University to build nationally recognized programs in eight emphasis areas, one of which is automotive and transportation technology.

The new graduate program will build on existing strengths at Clemson. Researchers have collaborated with some of the world's top automotive companies and federal agencies, as well as leaders in the motorsports industry.

Engineering projects have included development of complex computer models to predict handling of vehicles and their aerodynamics under a range of operating conditions, development of methodologies for virtual car design, collaborative design in a global environment and comparison of laser diagnostics from wind tunnel tests against data from actual track tests.

Clemson also has one of the nation's top university computational fluid dynamics labs. The complex CFD theories can be used to predict and ultimately control intricate fluid flows in everything from the exteriors of speeding cars to the interiors of jet engines.

Begun in the early 1990s, Clemson's motorsports initiative was the first of its kind in the nation. Today, the program is the most visible arm of Clemson's Brooks Institute for Sports Science, which combines the interdisciplinary studies of sports engineering, management, marketing and communications.

For more information about BMW, go to [www.bmwusa.com](http://www.bmwusa.com). For more about Clemson's motorsports program, go to [www.ces.clemson.edu/motorsports](http://www.ces.clemson.edu/motorsports).



Barker and Leube with Don Rice, director of Clemson's Brooks Institute for Sports Science.

CLEMSON WORLD/FALL 2002 • 1



## Univ of Utah USTAR Core Facilities

- Nanofabrication
- Small Animal Imaging
- Optical Imaging
- Vivarium
- Labs for Neuroscience and BioTech



# Science Parks Throughout the World



Belgium



Greece



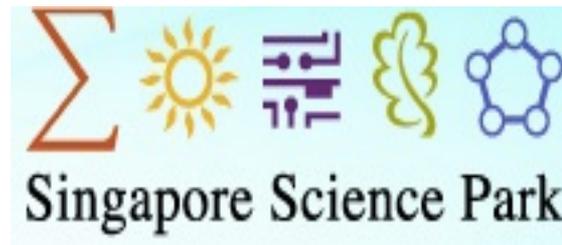
Brazil



Russia



Saudia Arabia



Singapore



Philippines

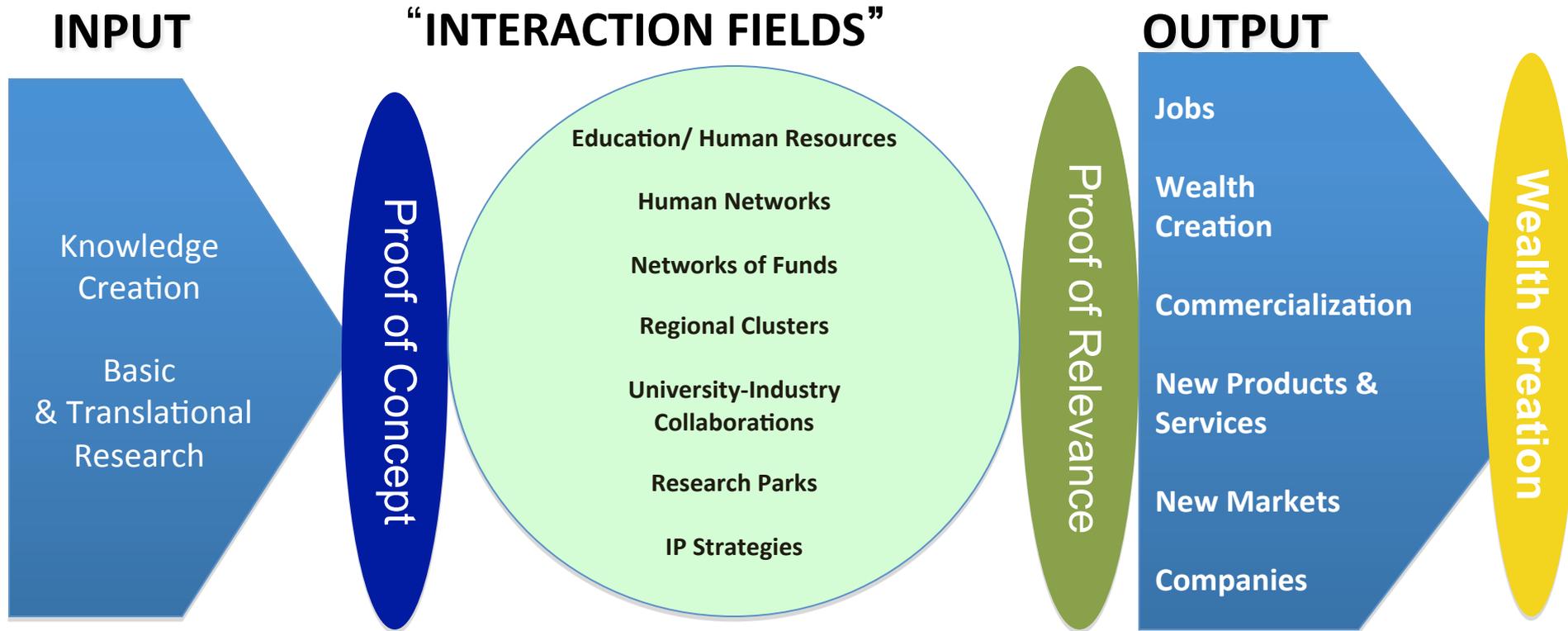


China



Japan

# Innovation Ecosystem



The concept of the **Innovation Ecosystem** stresses that the flow of technology and information among people, enterprises and institutions is key to a vibrant innovation process.

# Innovation System Partners

## ACADEMIA

- RESEARCH/T2
- LIFELONG LEARNING
- ECONOMIC DEVELOPMENT

## INDUSTRY

- PROFIT
- PROCESS
- PRODUCT

## INSEPARABLE MISSIONS

## GOVERNMENT

- SUSTAINABILITY
- QUALITY OF LIFE
- ECONOMIC POLICY

## FOUNDATIONS

- ECONOMIC GROWTH
- COMMUNITY INVESTMENT
- REGIONAL COLLABORATION

# IBED Foundation Funding



Cleveland



Pittsburgh

new economy  
initiative  
for southeast michigan

Detroit



St. Louis

CLAUDE  
WORTHINGTON  
BENEDUM  
FOUNDATION

West Virginia

# Regional Innovation Clusters (RICs)

RICs are a geographically-bounded, active network of similar, synergistic or complementary organizations which leverage their region's unique competitive strengths to create jobs and broader prosperity.



# Regional Innovation Clusters

## Five Key Components to Consider When Defining Unique Regional Assets

*What you make, including your existing & prospective industry clusters*

**ECONOMIC  
BASE**

**ENTRE-  
PRENEURSHIP**

*Your capacity to create companies wholly new or from existing firms*

*What you do: your workforce skills & human capital base*

**TALENT**

**INNOVATION  
& IDEAS**

*Your capacity to innovate and generate new ideas*

**Location, Infrastructure, Amenities,  
Factor Costs, Natural Resources**

*The basic conditions defining the economic milieu of the region*

# Best Practices in RIC Management

- **Regionally-Led** from existing networks & assets – bottom-up approach
- **Involve partnerships between private and public** at all levels (i.e. local, regional, state, and Federal)
- Unique **strengths of region are built upon** rather than trying to copy other regions (i.e. everyone can't support a biotech cluster)
- **Different strategies are developed for different clusters**
- Well-funded initially and **self-sustaining over the long-term**
- **Linked with relevant external efforts**, including regional economic development partnerships and cluster initiatives in other locations

# Government's Role in Innovation

- Long term vision and planning
- Identify gaps and trends in science, technology, innovation and SME development
- ***Be a catalyst through long-term strategic investments and partnering***
- Develop a balanced and flexible research and development investment portfolio
- Encourage private sector innovation
- Establish performance-based research and development
- Accelerate the commercial exploitation of creativity and knowledge



# National Initiatives



## President Obama's Bioeconomy Initiatives and America Invests Act (2011)

- **National Center for Advancing Translational Sciences** in NIH to advance commercialization (NCATS)
- Develop a **National Bioeconomy Blueprint** by (1/2012)
- Presidential Memo *“Accelerating Technology Transfer and Commercialization of Federal Research in Support of High-Growth Businesses”* (10/28/2012)
  - Establish plan & goals (within 180 days) & measure progress
  - Streamline the federal government’s technology transfer and commercialization process
  - Facilitate commercialization through local and regional partnerships
- **America Competes Act**
  - Provides \$750,000 for planning
  - \$300 million in loan guarantees

# Government Innovation Programs



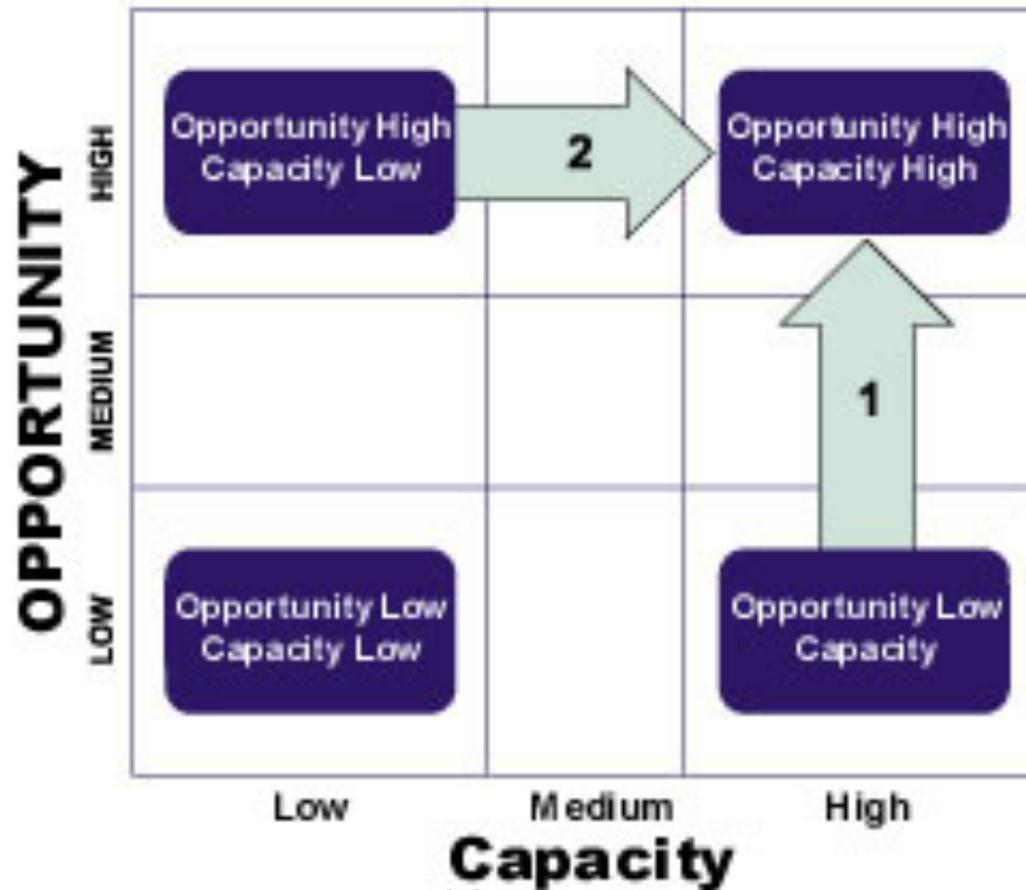
# Kansas Strategic Technology Cluster Assessment and a Plan for the 21st Century



Published by The  
Kansas Technology  
Enterprise  
Corporation

# Linking Opportunity With Capacity

Figure 1-2  
Linking Opportunity & Capacity:  
An Assessment Model

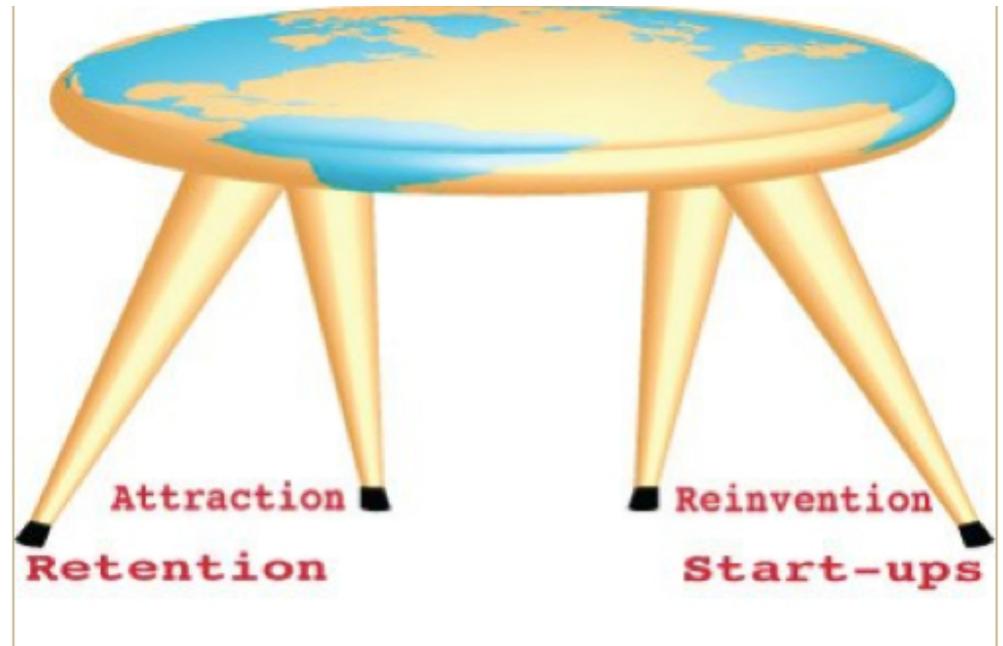


# The Kansas Cluster Experience - 2011

CLUSTER	ORGANIZATION	OUTCOMES
<b>Human BioSciences</b>	<b>Kansas BioScience Authority (KBA)</b> <a href="http://www.kansasbioauthority.org">www.kansasbioauthority.org</a>	<ul style="list-style-type: none"> <li>•\$581m Fund</li> <li>•Build world-class research capacity, growth of bioscience startups, expansion of the state's bioscience clusters and facilitate industrial expansion and attraction.</li> </ul>
<b>Value-added Agriculture and Ag Bio</b>	<b>National Agricultural Biosecurity Center (NABC)</b> <a href="http://nabc.ksu.edu/content">http://nabc.ksu.edu/content</a>	<ul style="list-style-type: none"> <li>•\$500m Research Center</li> <li>•Focused on protecting America's agricultural infrastructure and economy from endemic and emerging biological threats.</li> </ul>
<b>Aviation</b>	<b>National Institute for Aviation Research (NIAR)</b> <a href="http://www.niar.wichita.edu">www.niar.wichita.edu</a>	24 year-old research and tech-transfer center established to advance the nation's aviation industries that may benefit from aviation-related technologies.
<b>Information and Telecommunications &amp; Computing</b>	<b>Software and Technology Association of Kansas (SITAKS)</b> <a href="http://www.sitaks.com">www.sitaks.com</a>	Advocate for Kansas' software and information technology sector to help Kansas' software and IT companies grow and succeed.

# Economic Development

- Economic Development is like a 4 - legged stool:
  - **Attraction**
  - **Retention**
  - **REINVENTION**
  - **Grow Your Own**
- IBED requires patience and persistence, continuity and consistency
- Working with early-stage companies takes time
- A balanced portfolio economic development strategy is best!



# Convergence of Traditional Eco Devo & IBED

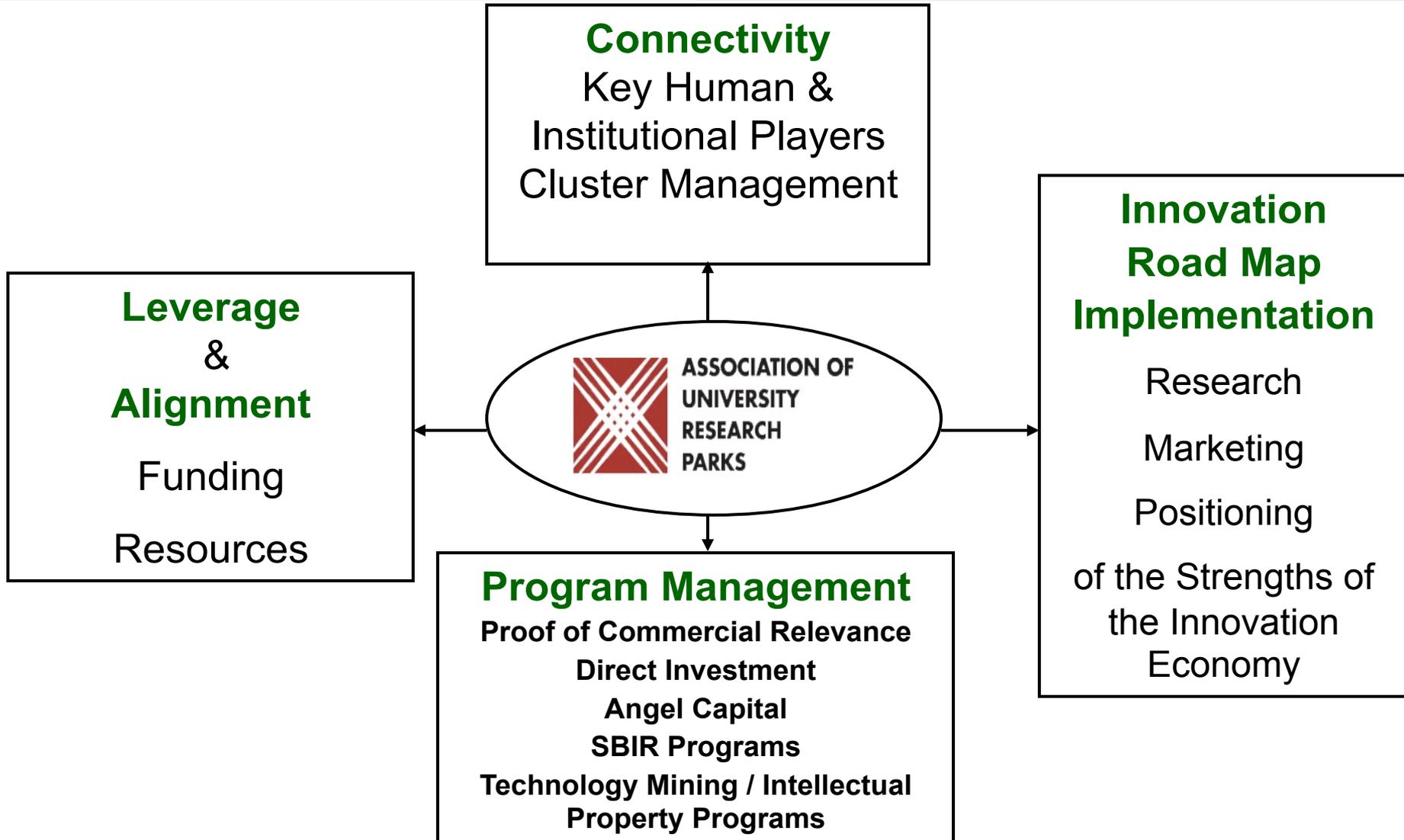
	<u>Traditional</u>		<u>Innovation</u>
<b>Assets:</b>	PHYSICAL		KNOWLEDGE
<b>Competitive Basis:</b>	Natural resources Highways / Rail Proximity Costs	➔	Specialized talent Networks, Clusters, University research Industry partnerships Commercialization, Market Positioning Globalization
<b>Key values/offerings:</b>	University Research Parks Incentives	➔	Research Parks Workforce competencies Lifestyle
<b>Lead Organization:</b>	Chambers / EDCs	➔	Economic developers <b>INNOVATION INTERMEDIARIES</b>

# What is a Innovation Intermediary?

An Organization at the Center of the region's, state's or country's efforts to align local technologies, assets and resources to work together on advancing Innovation.



# 21<sup>st</sup> Century Innovation Intermediary



# Intermediary Best Practices

- Longevity
- Bipartisan Support & Champions
- Independent Organizations
- Continuous Reinvention
- PRIVATE SECTOR LEADERSHIP
- Understand Return On Investment
- Sustainability In Funding
- Accountable
- Innovative
- Effective Leadership



# Innovation Intermediary Commercialization Services

Investigation	Technical	Market	Business
Proof of Concept	Technology Concept Analysis	Market Needs Assessment	Venture Assessment
<b>Development Phase</b>			
Feasibility	Technology Feasibility	Market Study	Economic Feasibility
Planning	Engineering Prototype	Strategic Marketing	Strategic Business Plan
Introduction	Pre-Production Prototype	Market Validation	Business Start-Up
<b>Commercial Phase – Proof of Commercial Relevance</b>			
Full Scale Production	Production	Sales and Distribution	Business Growth
Maturity	Production Support	Market Diversification	Business Maturity
		46	

# Successful Funding Models

**Ohio**

**Third Frontier**  
Innovation Creating Opportunity



KANSAS BIOSCIENCE  
AUTHORITY



**\$700M 5-year Bond Issue**  
**62% Taxpayer vote approving**

**\$581M 15 year Wage-tax TIF**

**\$160M VC Premium insurance**  
**Tax Incentives**

**\$175M Budget**

**\$60M Angel Tax Credits**

**MICHIGAN**<sup>SM</sup>  
Economic Development  
Corporation



# Pennsylvania Regional Centers-EB 5 Financing

## About EB-5

- U.S. immigrant investor program
- Provides issuance of "conditional" or temporary (two year) green cards to qualifying immigrant investors & families
- Investments a of **US \$1M (\$500K in designated target areas)**
- In businesses that create at least **ten full-time** permanent jobs for U.S. workers.



## EB-5 Project and Regional Centers in Pennsylvania

- PA Regional Centers attracted \$500M investment to PA, and
- Created close to 10,000 jobs.

Project	Loan Amount	# of Investors
Wexford/SC 3711 Market	\$20M	40
Temple U Health System	\$13M	26
UPMC	\$50M	100



# ***“Swipe From The Best, Then Adapt.”***



Photograph by Allison Shirreffs

***---Tom Peters***

# U.S. State Innovation Programs



# Pennsylvania's Sustainable Government Innovation

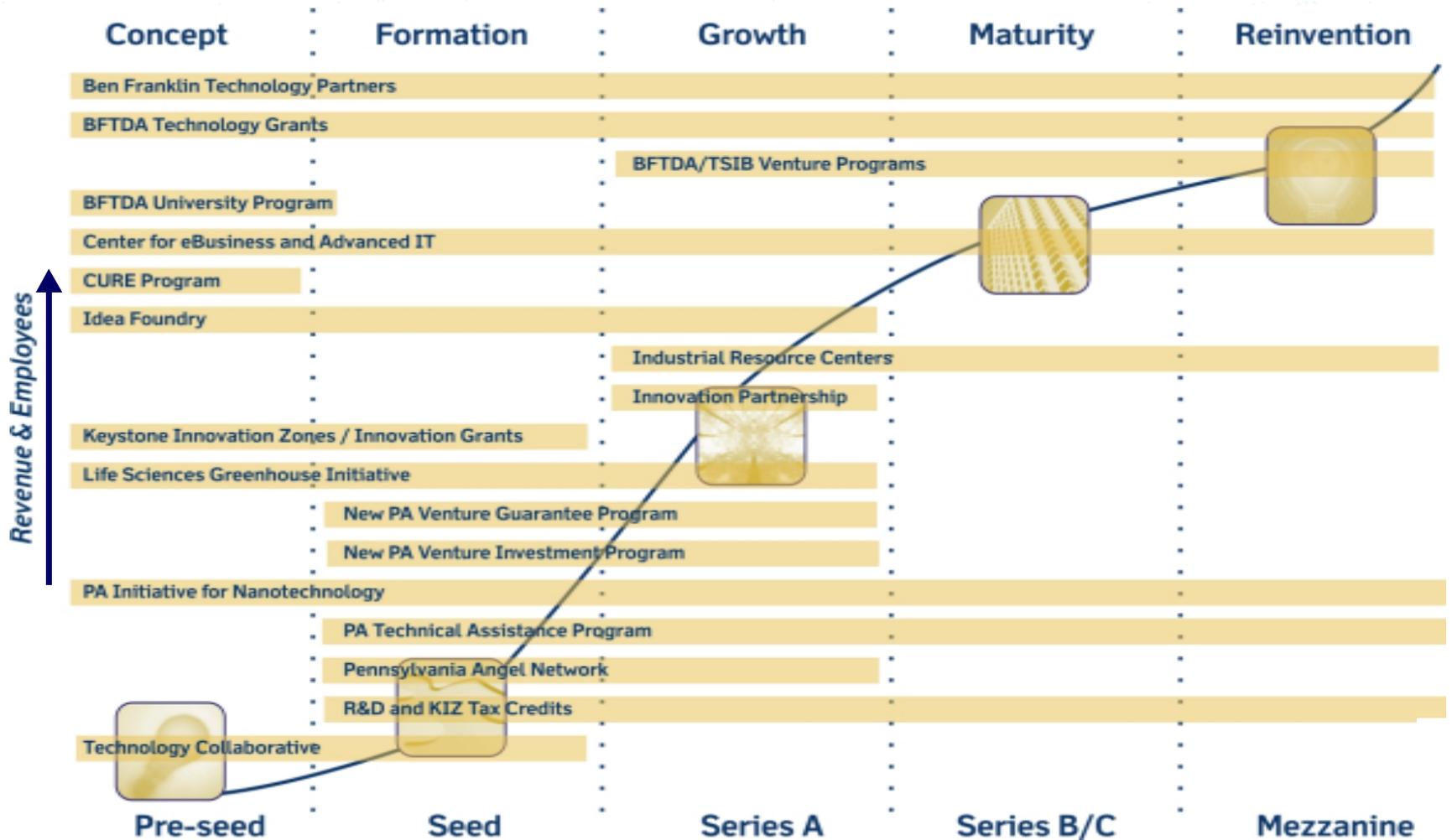
- Pennsylvania Governors Thornburgh, Ridge, & Rendell, discuss the importance of committing to economic development through science, innovation & technology
- The governors focused on the effects that **short-term decisions would have on long-term goals**
- **Three important ideas:**
  - ***Think outside of the box***
  - ***Measure your results and***
  - ***Tell your story well.***



# Technology Investment

## Technology-based Economic Development Tools Along the Continuum

> ready > set > succeed



# Best Practices in IBED

**Ohio**

**Third Frontier**

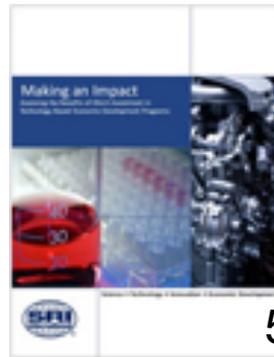
Innovation Creating Opportunity

The Ohio Third Frontier represents an unprecedented and bipartisan commitment to expand Ohio's technological strengths and promote commercialization that leads to economic prosperity throughout Ohio. Designed to build world-class research programs, nurture early-stage companies, and foster technology development that makes existing industries more productive, Ohio Third Frontier creates opportunity through innovation.

***"Ohio's \$700M Third Frontier initiative is a comprehensive, professionally run effort to build world-class research capacity, promote interaction between research and industry, and commercialize R&D." –***

National Governor's Association and Pew Center for the States

**hi** velocity

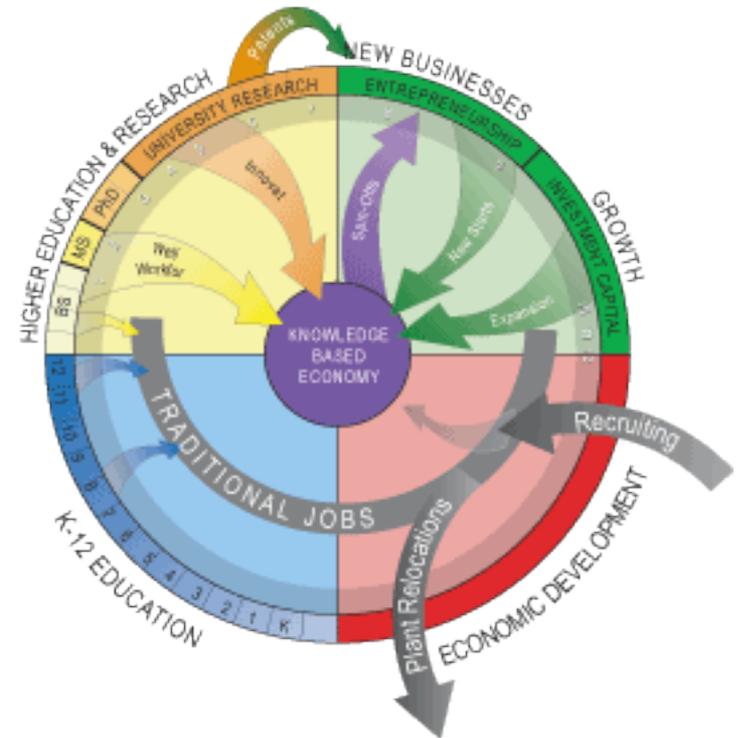




KANSAS BIOSCIENCE  
AUTHORITY

# Best Practices in Innovation-Based Economic Development

- \$581 million state-funded independent bioscience TBED organization
  - \$75.5 million program budget; \$3.5 million operating budget
  - 18 employees (8 “deal” people)
- Investment priorities
  - Expand the quantity and quality of bioscience research
  - Focus on the commercialization of bioscience discoveries
  - Foster formation and growth of bioscience companies
  - Position Kansas for international leadership in key clusters



Partners in Bioscience Growth

# Tennessee TNInvestco

- Provides no less than \$160M of financial capital to be invested in small businesses in Tennessee
- Funded by deferred insurance premium tax credits
- Focused on early stage, equity investments
- Targeting high-growth companies for “transformational” outcomes
- Professionally managed private sector funds
- Creates the opportunity for financial return to state government
- Access to Capital
- A New Program..... A New Approach...



# INVEST MARYLAND

## Fueling Innovation + Creating Jobs

*InvestMaryland* will provide funding to spur growth and innovation — it is a premium tax credit program designed to create thousands of jobs and revitalize venture capital funding in Maryland. This \$70 million fund, approved by Maryland lawmakers during the 2011 General Assembly, is the largest venture capital investment initiative in the State's history.

# Innovation 2 Enterprise - Oklahoma

- Private not-for-profit Oklahoma corporation focused on wealth creation by growing the technology-based entrepreneurial economy.
- Works directly with entrepreneurs, researchers and companies to assist in help them commercialization of technologies, launch and grow new businesses and access needed capital.
- Funding
  - Proof of Concept Fund
  - Seed Capital Fund
  - Angel Network
- Entrepreneurial Development



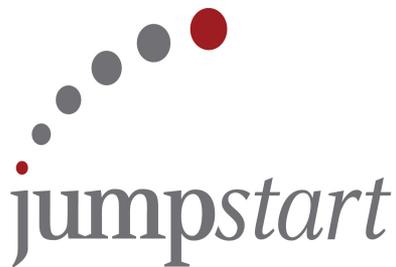
# Best Practices in Innovation-Based Economic Development



**USTAR has created a number of research teams at the University of Utah and Utah State University. Spearheading these teams are world-class innovators hungry to collaborate with industry to develop and commercialize new technologies.**

**Research Teams engage with innovators and entrepreneurs around the state of Utah. Learn to maximize your innovative business potential by collaborating with USTAR in your region, particularly if your product or service matches a USTAR focus area.**

# Regional IBED Intermediaries – BHI logo



# Northeast Ohio IBED Intermediaries



NorTech, (the Northeast Ohio Technology Coalition) is a nonprofit Technology-Based Economic Development (TBED) organization that champions growth in Northeast Ohio's 21 county region. Foundation funded.



JumpStart is creating economic transformation in Northeast Ohio by providing resources to entrepreneurs to grow their high potential, early stage companies.



BioEnterprise is a business formation, recruitment, and acceleration initiative designed to grow health care companies and commercialize bioscience technologies



Team NEO advances Northeast Ohio's economy by attracting businesses worldwide to the 16-county Cleveland Plus region.



Cleveland Clinic Innovations advances commercial oriented innovation and transforms promising therapies, devices and diagnostics into products by creating spin-off companies, licensing to established companies and enabling equity partnerships.

**Founded:**2008

**Organizational Mission:** Unique philanthropic initiative aimed at helping to restore southeast Michigan to a position of leadership in the new global economy.

**Original Funding:** *\$100M – 8 year initiative - 10 national and local foundations*

**Goal:** Accelerate the transition of metro Detroit to an innovation-based economy. Entrepreneurial Eco-System

- Capitalizing on Existing Assets and Resources
- Build and employ a more skilled and educated workforce
- Urban Entrepreneurial Partnership provides assistance to 150 minority automotive suppliers to diversify their customer bases to aerospace, alternative energy, medical devices, military and homeland security.





# BioHealth Innovation

Maryland's Commercialization Collaborative

- BHI is a regionally-oriented, 501(c)(3) nonprofit private-public partnership functioning as an innovation intermediary focused on commercializing market-relevant biohealth innovations and increasing access to early-stage funding in Maryland.
- *Goal: return on investment from the world-class research assets with a cohesive strategy to move relevant, market driven ideas from labs to market.*
- Market-driven, private sector- led initiative
- BHI will increase - ***the availability of early-stage capital*** by creating ***new early-stage funds*** and developing a ***national and global network of investors***

# Alignment of National, State & Regional Policies



**Obama  
Administration**



**Governor  
O'Malley**



**County Executive  
Ike Leggett  
Montgomery County**



**Stephanie Rawlings -Blake  
Mayor of Baltimore**

- Link Both State, County & City Strategies to Obama Administration Objectives
- Develop an integrated Regional BioHealth Economic Development and Transit Strategy
- Present the “Regional Job Generating BioHealth and Transit Plan” to the White House & partner with federal agencies and other stakeholder organizations as a “Showcase Model.”
- Develop structure & governance for the regional BioHealth innovation intermediary
- Obtain Priority Federal Funding for Region’s BioHealth Industry-Federal Labs-University Innovation Intermediary Pilot Plan
- Obtain Priority Federal Funding for the region’s Innovative “State of the Art” Comprehensive Rapid Transit Vehicle Plan (CCT et al)
- Develop a pilot BioHealth-Regional Innovation Cluster (H-RIC) program

# BHI Operation Funding

## *Founding Financial Sponsors:*



JOHNS HOPKINS  
UNIVERSITY



NEA®



BHI is funded by:  
businesses, universities, foundations/NGOs, and local, state, and federal governments.

Businesses can make contributions to BHI either as a tax deductible contribution to the 501c3 organization or as an investment in new biohealth early-stage investment funds.



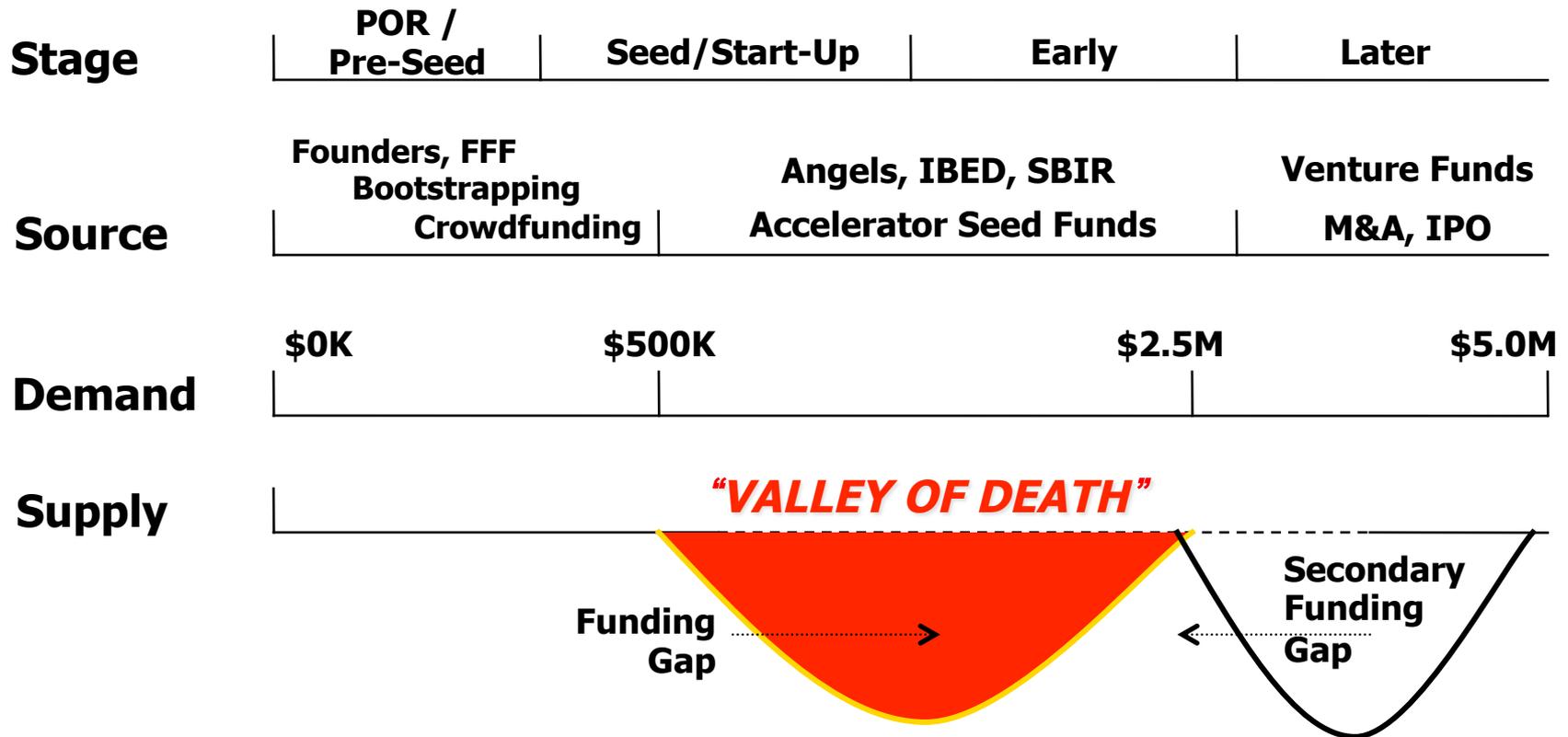
**Jobs! Jobs! Jobs!**

# Does Seed Investing **REALLY** Create Jobs?



# Innovation Capital Valley of Death

## “VALLEY OF DEATH”



# Bootstrapping

The term comes from the German legend of Baron Münchhausen pulling himself out of the sea by pulling on his own bootstraps.



**Definition:** “*The act of starting a business with little or no external funding*”

# Crowdfunding

***Crowdfunding***—as its name implies—aims to reach a funding goal by getting many investors to put in small amounts.



# Leading Crowd Funding Organizations

	<b>Traditional Angel Funding</b>	<b>CrowdFunding</b>
Investors	Individual professional investor or a small team	Potentially hundreds of micro-investors
Business Network	Limited to Angel's network	Extended to all of the investors network
Pre-Launch Buzz	Usually nothing	Tremendous buzz potential
Community	Relies on company to create one	Built in seed community from investors and followers
Strategic Coaching	Usually very good	Over time will improve, but nothing structured now
Process: Access to capital	Usually slow to very slow	extremely fast
Process: Transparency	Usually very opaque	Transparent to everyone involved.

**KICKSTARTER**



 **MicroVentures**

 **profunder**

# Incubation Nation: Where Great Ideas Are Born

Click a City

## Seattle

Microsoft alum  
Incubate start-ups

## Corvallis, OR

Entrepreneurial  
academics inquire within

## Boulder

Summer camp for  
promising start-ups

## Salt Lake City

Subsidized lab space  
for techies

## Oklahoma City

Funding at every  
stage of development

## Kansas City, KS

Everybody get a  
mentor!

## Austin

Ten weeks of advice  
from 20 mentors

## Phoenix

Plans to assist 2,000  
start-ups

## San Diego

First Incubator for  
early-stage tech firms

## Kona, HI

Harnessing the sun  
and sea for profit

## Detroit

New ventures grow in  
GM's shadow

## Cleveland

Seed funding for  
minority CEOs

## Madison, WI

Tech transfer in  
Dairyland

## Fargo, ND

A patron funds a  
vaccine corridor

## Rochester, NY

Business prodigies  
get their own dorm

## Suffolk, VA

A nexus of  
government  
contractors

## Birmingham, AL

Some 140,000 square  
feet of Innovation

## Ridgeland, MS

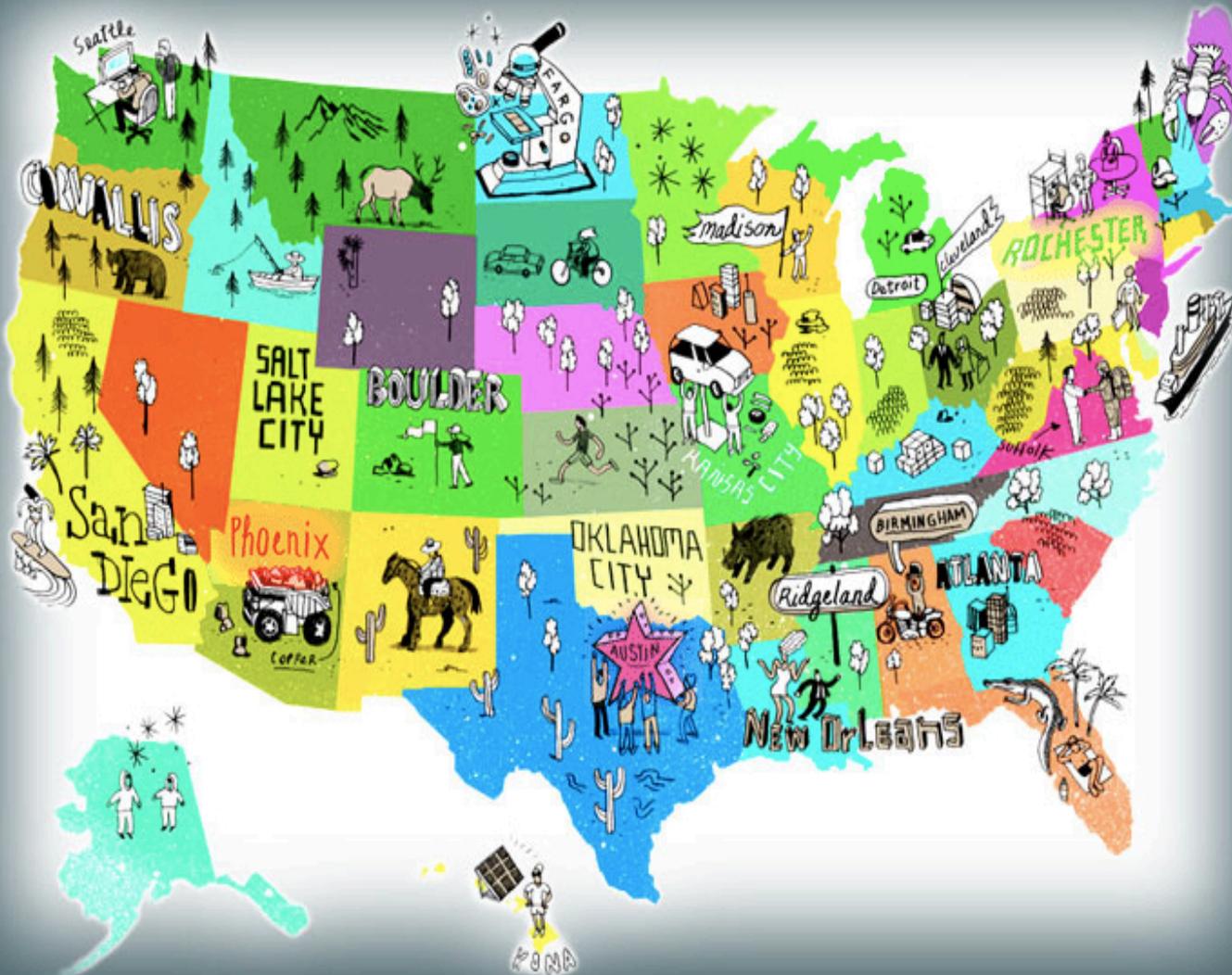
Funding for 125  
start-ups in one year

## Atlanta

Building on Ideas  
from six universities

## New Orleans

How about your own  
MBA team?



# Key Difference Between Incubators and Accelerators

**Incubators** - incubators allow for slower growth, although they typically have some requirements as to how long companies can remain in the incubators before they graduate.



**Accelerators** – as their name implies, focus on an intense, boot-camp-like experience to get new businesses up and running in a matter of months.



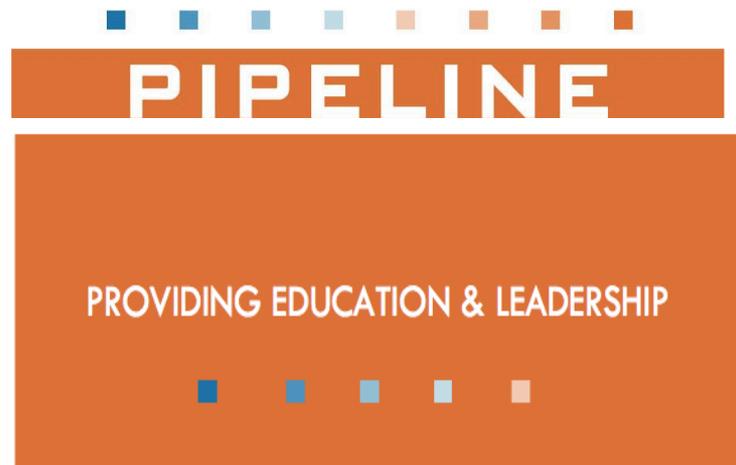
# Seed Accelerator Model May Be Relevant



- **> 130 accelerators exist & spreading rapidly**
- **Could grow > 400 to 500 in 5 years**
- **Focus on fast-test sectors**

# Kansas PIPELINE

- To identify talented and entrepreneurial Kansans, match them with best-in-class:
- Training
- Resources
- Mentors
- Facilitate their dynamic growth in KS
- To utilize the momentum and substance of the program to aggressively develop the entrepreneurial ecosystem in Kansas that is essential to sustained entrepreneurial activity and expansion.



- Highly Selective.
- 10 innovators in the inaugural year.
- One-year comprehensive program.
- Participate while creating company or creating product and/or concept.
- \$36,000 stipend for discretionary use while exploring opportunities for a startup technology venture.

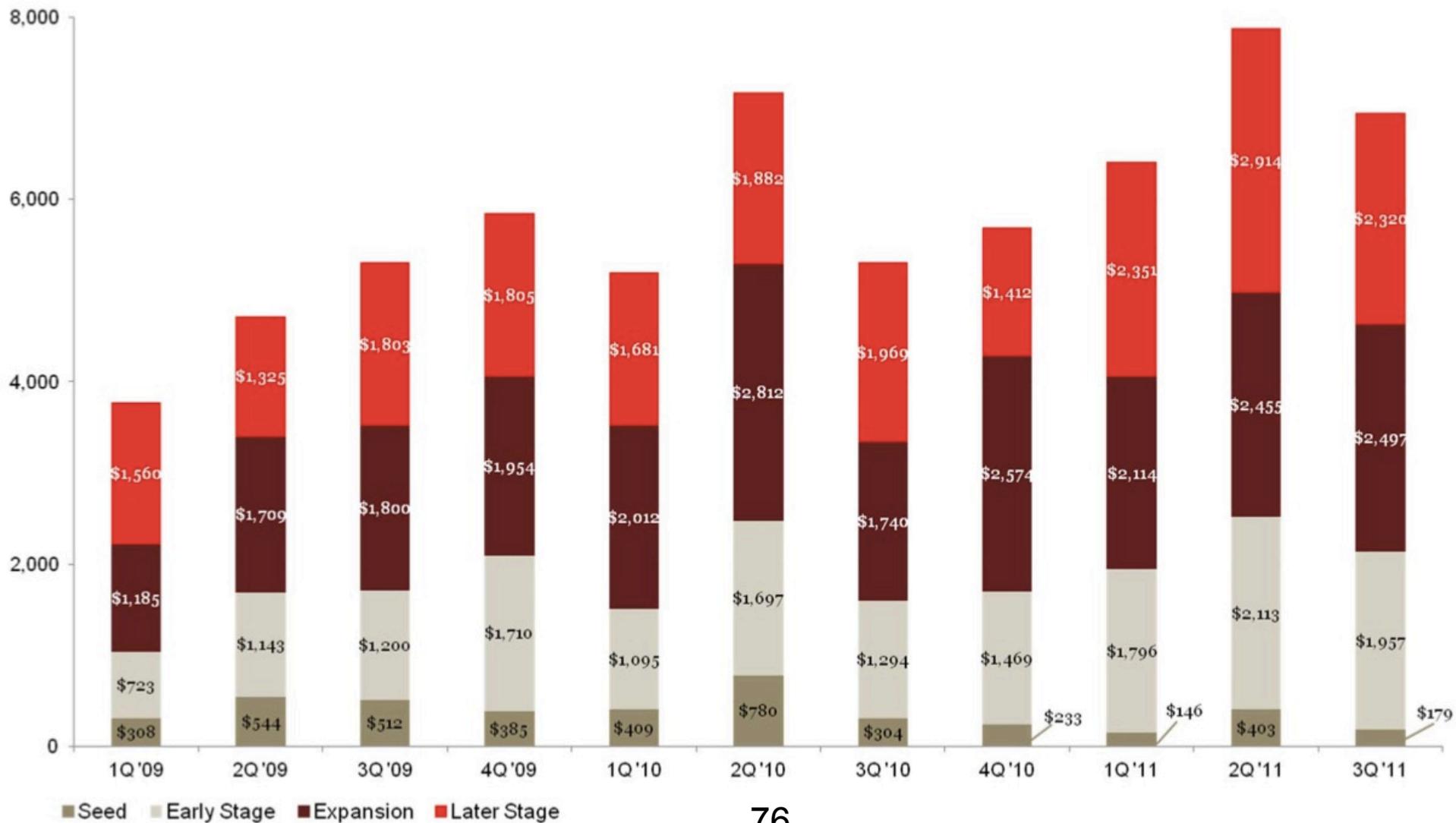


# VC Trends



# VC Amount Invested By Stage

Amount Invested by Stage (\$M)



# Top 10 States for Venture Capital

State	2010 VC Raised	1970-2010 VC Invested/Companies	Public Co's VC Backed # of Jobs/ U.S. Revenues	Cost of 1 Job Created per VC \$ invested
CA	\$11.6B	\$215.7B / 9,827	2,822,345/\$846B	\$74,846
MA	\$2.5B	\$53.6B / 2,860	775,151/\$190B	\$69,324
TX	\$981M	\$27.7B / 1,743	1,129,551/\$243B	\$24,525
NY	\$1.4B	\$25.2B / 1,799	656,632/\$188B	\$38,384
WA	\$634M	\$15.B / 837	778,579/\$256B	\$20,293
CO	\$483M	\$15.1B / 793	162,720/\$45B	\$92,812
NJ	\$469M	\$14.6B / 788	328,429/\$66B	\$44,464
PA	\$559M	\$13.3B / 1,130	783,527/\$238B	\$16,930
IL	\$732M	\$9.8B / 726	256,750/\$63B	\$38,693
NC	\$529M	\$8B / 475	195,973/\$42B	\$40,835

Source: PWC/NVCA 2011

# Public Investment In Job Creation

Category	CDVCA*	State of PA	State of MI	State of UTAH	Stimulus Bill*
Funds Invested	\$26M	\$90M	\$291M	\$60M	\$728.9B
Jobs Created	3,700	8,150	28,854	2,047	400,803
\$ Per Job Invested	\$7,100	\$11,000	\$11,728	\$29,300	\$1,818,000

\*Community Development Venture Capital Alliance

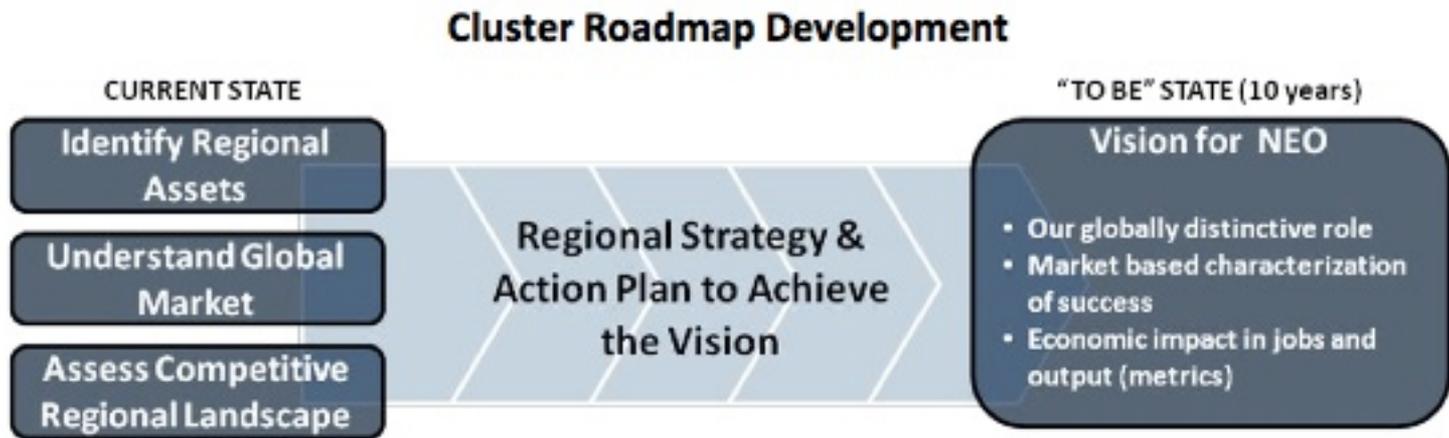
\*\* Source: Recovery.gov 2011

# Innovation Funding Continuum

DREAM	CONCEPT	APPLIED	COMMERCIAL RELEVANCE	STARTUP	ROLL OUT	GROWTH
<p>FoundersFFF Bootstrapping Crowdfunding</p>	<p>Seed</p>	<p>Incubators/ Accelerators</p>	<p>IBED</p>	<p>Federal State Regional</p>	<p>ANGEL</p>	<p>VC</p>
			 <p>79</p>			

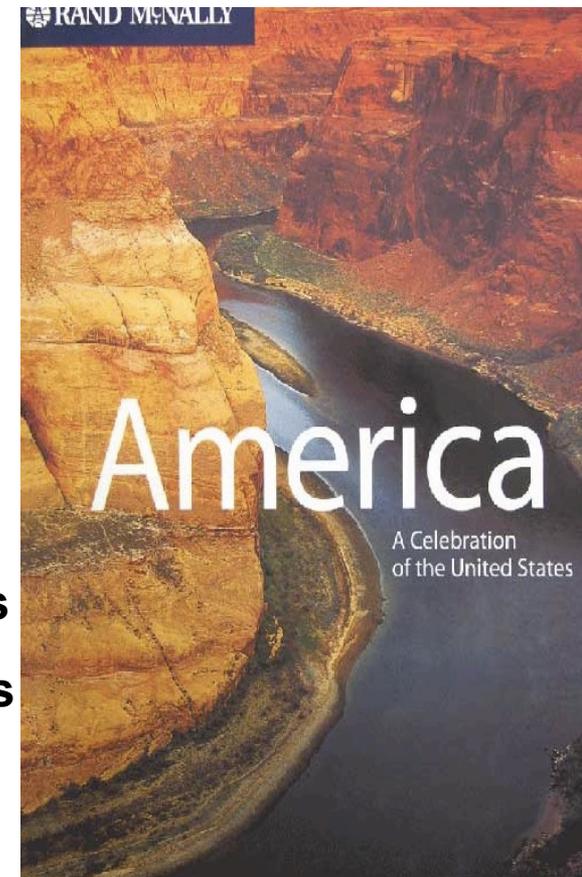
# What Is A Road Map.....Why Is It Needed?

- A roadmap answers the *question* “**Where do we want to be and how to we get there?**”
- A cluster roadmap *provides strategies and action* plans to best *achieve a vision of the future shared by a critical mass* of industry-related organizations.
- The strategies and action plans are developed according to the unique strengths of the cluster and region as compared to a global market opportunity.



# Innovation America: Innovation Road Map Process

1. Literature Review of Comparables
2. Key Stakeholder Interviews/Recommendations
3. Asset & GIS Mapping/Cluster Analysis
4. Innovation Benchmarking/Index (Peer 2 Peer)
5. Innovation & Entrepreneurship Resource Guide
6. Innovation Economic Development Organizational Analysis
7. Innovation & Commercialization Program Gap Analysis
8. Innovation Ecosystem Public Policy Recommendations
9. Innovation Strategic and Organization Plan
10. Operations & Implementation Plan
11. Branding & Marketing Strategy
12. Economic Impact Analysis - Celebrate Your Success



# IOWA Innovation Road Map Leadership

Population: 3,000,000



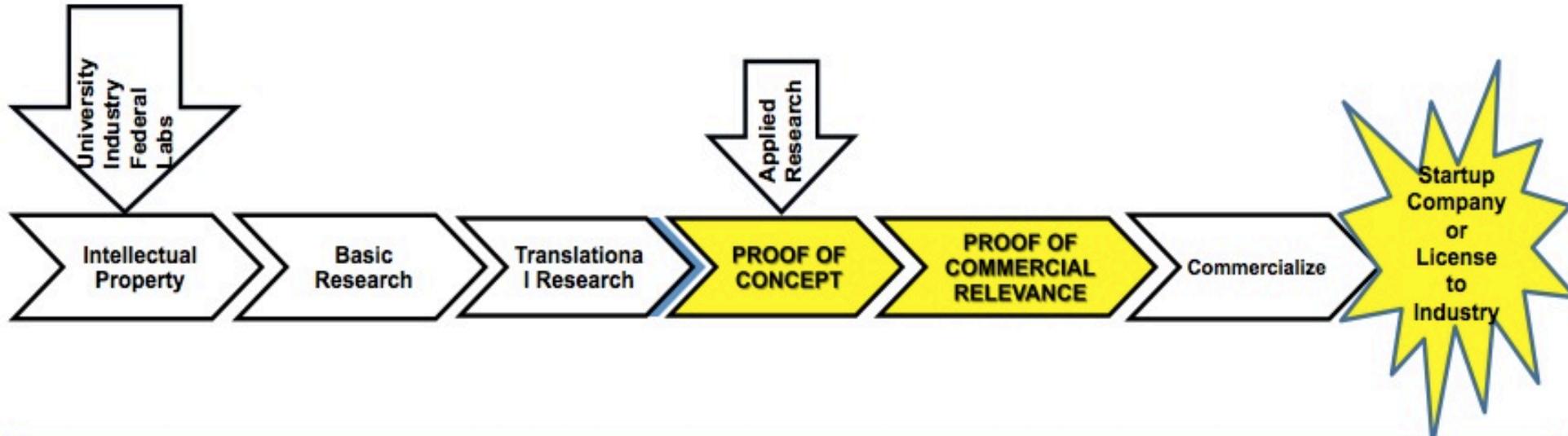
Iowa Department of  
Economic Development



IOWA STATE  
UNIVERSITY



# Iowa Integrated Innovation Commercialization Network (IIICN)



# Iowa Innovation Index - Indicators

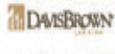


## Iowa Innovation Index

### IOWA INNOVATION INDEX KEY INNOVATION INDICATOR SCORECARD

National Ranking	Regional Ranking	Indicator Number	Indicator Subject Rankings
<b>Key:</b> ++: National/Regional Indicator Ranking - Strength 0: National/Regional Indicator Ranking - Neutral ---: National/Regional Indicator Ranking - Weakness			
<b>Economic Impact</b>			
---	---	1	Industry Cluster Employment & Wage
N/A	N/A	2	Occupations & Wages
---	---	3	Household Income
0	---	4	Productivity
---	---	5	Corporate Sales and Manufacturing Value-added
---	+	6	Manufacturing Exports
---	---	7	Wages & Wage Growth (In Key Industry Clusters & Overall)
<b>Innovation Research &amp; Commercialization</b>			
0	0	8	Royalty and Licensing Income to Universities
---	---	9	Start-up Companies Formed from University Research
---	---	10	Federal Investment in University & Engineering Research
---	+	11	State and Local Investment in University Science & Engineering Research
0	---	12	Industry & Other Support in University Science & Engineering Research
---	0	13	Size of College and University Endowments
---	0	14	Patenting
++	++	15	Academic Article Output
---	---	16	Research & Development Performed
<b>Innovation Capital</b>			
---	+	17	Sum of all investments - all stages
---	---	18	Targeted Industries Innovation Capital Investments
---	---	19	SBIR/STTR Awards
---	---	20	Number of Public Traded Companies
TBD	TBD	21	R&D Tax Credits
TBD	TBD	22	Angel Tax Credits
<b>Innovation Workforce</b>			
+	0	23	Education Level of the Workforce
---	---	24	Public Investment in K-16 Education
---	---	25	Science and Engineering Degrees
N/A	0	26	Talent Flow and Migration (Int'l and domestic)
<b>Innovation Location and Environment</b>			
N/A	++	27	State-based Innovation Intermediary (Public/Private Partnership)
---	0	28	Broadband Internet Availability
N/A	---	29	E-Government Programs
---	---	30	Arts and Cultural Endowment

Special thanks to our sponsors:



NOTE: Regional strengths are based on Iowa's performance as a comparison to Illinois, Kansas, Minnesota, Missouri, Nebraska, South Dakota and Wisconsin.

# Paddling Together For Success



Are You Pulling Alone Or.....

# Pulling Together For Success



.....Are We Pulling Together ?

# Bill Gates - Microsoft

***“Never before in history has innovation offered promise of so much to so many in so short a time.”***



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