# REGIONAL INNOVATION NATIONAL PROSPERITY

Summary Report of the Regional Competitiveness Initiative &
Proceedings of the 2005 National Summit on Regional Innovation

*Prepared for the U.S. Department of Commerce*
*Economic Development Administration*

Council on Competitiveness

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# WELCOME

Council on Competitiveness



Dear Colleagues:

America's regions have a choice: innovate or stagnate.

The increasingly open and interconnected nature of the world economy has radically changed what it takes for American communities — in California, Colorado, or Connecticut — to succeed. It used to be that U.S. regions could build a prosperous economy by relying on exporting natural resources or supporting industrial production of basic products. Those days are over. Firms in advanced economies like the U.S. can no longer win by selling low-cost or standardized products.

Instead, the only sustainable competitive advantage available to U.S. firms is to continually innovate faster than their international competitors. We must design, develop, and deploy value-added products and services faster than the competition. For regions, the only way to support high and rising levels of prosperity is to provide a fertile environment for this sort of continual innovation. Economic and workforce development strategies must evolve to reflect this innovation imperative.

The Council on Competitiveness is proud to be catalyzing this evolution. For the past two years, the Council has been assisting regions across America to craft innovation-based development strategies. Supported primarily by a grant from the Economic Development Administration, the Council's Regional Competitiveness Initiative worked with community leaders in Central New Mexico, Greater Rochester, the Inland Northwest, Northeast Ohio, St. Louis, West Michigan, and Wilmington, Delaware.

In each of these regions, the Council partnered with academic, business, and public sector leaders to assess their regional innovation platform, identify key opportunities for improvement, and launch initiatives designed to pursue those opportunities. At the April 2005 *National Summit on Regional Innovation*, we convened leaders to discuss best-in-class strategies to address common challenges. Integrating our findings from the past two years and the conference discussions, this report identifies five key cross-cutting issues faced by regions seeking to build innovation-based strategies and suggests potential responses to these challenges.

As the report title indicates, our national prosperity depends upon our regional innovation capacity. We are optimistic that leaders across the U.S. will rise to the challenge of building a new innovation infrastructure in their regions and are hopeful that this report will aid in this endeavor.

Sincerely,

Deborah L. Wince-Smith

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*President*
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# CROSS REGIONAL FINDINGS OVERVIEW

# A GLOBAL CHALLENGE

In the modern global economy, U.S. regions face a new economic development challenge. Traditionally, the regional economic development endeavor has been focused on attracting large industrial operations or headquarters using tax incentives and access to inexpensive labor as the primary promotional tools. During the past few decades, however, the U.S. industrial landscape has transformed dramatically. Many labor-intensive industries in the U.S. have either shifted production to other parts of the world or disappeared altogether. In their place, the American economy has developed a large number of industries in which intellectual capital drives growth.

The U.S. is not unique in building a knowledge-based economy. In addition to other advanced economies, many formerly "underdeveloped" countries are now competing in knowledge-intensive industries previously considered to be safe from international competition. America now faces intensifying competition at both ends of the jobs spectrum: low-wage/low-skill and high-wage/high-skill.

At the spectrum's low end, U.S. regions must face the reality that there are fewer and fewer industries in which American firms can compete globally using a low-cost strategy. On the high end, U.S.-based firms can and do win. In many industries, firms operating in the United States have been able to adjust to new global business conditions and develop international leadership. Economic development strategies, however, have not always kept pace with the changing global economy. Many communities are still pursuing the old, incentive-based strategies. These strategies don't work in a world in which firm success depends ever more on the quality of ideas and talent, and ever less on traditional physical infrastructure. In a knowledge-based economy, new strategies are required to support the prosperity of American workers.

# THE ANSWER: INNOVATION

We already know that innovation is the key to driving economic growth. Economists calculate that nearly 50% of U.S. annual GDP growth is attributed to increases in innovation. For the past two centuries, the United States has been the world-leader in developing innovative products and services. While we have utilized our natural resources, it is our national ability to generate and apply new knowledge that has allowed us to become the world's leading economic engine, and has supported consistent increases in well-being for our citizens.

## The Changing Nature of Innovation

While innovation remains the answer, the nature of innovation is changing, and so are the ways in which we need to compete. The 2005 National Innovation Initiative, the Council's two-year study of America's innovation system, concluded that innovation has become:

- **Faster:** Technology advances are diffusing at ever-increasing rates. It took 55 years for the automobile to spread to a quarter of the country, 35 years for the telephone, 22 years for the radio, 16 years for the personal computer, 13 years for the cell phone, and only seven years for the Internet.[1]
- **Multidisciplinary:** The most valuable innovations often arise from the intersections of different fields or spheres of activity. Fields like bioinformatics or nanotechnology did not even exist a few decades ago. Today, many economists believe they will become major drivers of the U.S. economy of the future.
- **Collaborative:** As innovations become more technologically complex, they require active cooperation and communication among scientists and engineers and between creators and users.
- **Democratized:** Innovation used to be the domain of research and development departments. Today, more workers and even customers are involved in the innovation process. Firms in industries as diverse as software and food flavoring are providing tools to customers to design their own products.
- **Global:** Innovation can originate anywhere. Increased education and economic growth have improved the capacity of developing countries to offer new products and services. Modern communications and transportation technologies allow these countries to share advances with consumers across the globe. As a result, great ideas — regardless of where they originate — are less likely to be lost in our increasingly interconnected world.

However, great ideas are also more likely to be developed and commercialized in countries outside of the United States. Throughout the world, competition is intensifying. Consider the following facts:

- Foreign-owned companies and foreign-born inventors account for nearly half of all U.S. patents; Japan, Korea, and Taiwan account for more than one-quarter of this subgroup.[2]
- Sweden, Finland, Israel, Japan, and South Korea each spend more on R&D as a share of GDP than the United States.[3]
- In 2004 China overtook the United States to become the world's leading exporter of information and communications technology (ICT) goods such as mobile phones, laptop computers and digital cameras.[4]
- Only six of the world's 25 most competitive information technology companies are based in the United States; 14 are based in Asia.[5]

1 Federal Reserve Bank of Dallas, Annual Report, 1996. **http://www.dallasfed.org/fed/annual/1999p/ar96.html**.
2 OECD, Patent Database, May 2003. **http://www1.oecd.org/publications/e-book/92-2001-04-1-2987/PDF%5CA43.pdf**.
3 OECD, Science, Technology and Industry Scoreboard, 2003, R&D Database. **http: //www1.oecd.org/publications/e-book/92-2003-04-1-7294/**.
4 OECD, "China overtakes U.S. as world's leading exporter of information technology goods" December 12, 2005
5 BusinessWeek, "The Information Technology 100 Scoreboard," June 21, 2004. **http://www.businessweek.com/pdfs/2004/0425_it100.pdf**.

# REGIONAL INNOVATION

In summary, the changing nature of innovation and accelerating global competition means that the U.S. can no longer rest on its past success. Our innovation leadership is not guaranteed and neither is our history of a rising living standard. To sustain our growth, we must innovate more, innovate better, and innovate faster. As the National Innovation Initiative report, ***Innovate America***, concludes, "the capacity for innovation is going global — and we must pick up the pace ... today, the forces of global economic integration and advances in technology are creating a different and more complex challenge. Sustaining competitive advantage will require moving beyond efficiency and quality toward creating new markets, increasing choice and value to customers, and innovating continuously on a global basis."

Paradoxically, even as innovation has globalized, the role of regions as the critical nexus for innovation-based economic growth has increased.

Although national and state policies create a platform for innovation, the locus of innovative activities is at the regional level, where workers, companies, universities, research institutions and government interface most directly. True innovation "hot spots" emerge regionally around specific industry clusters. Regions are the building blocks of national innovation capacity because they offer proximity and can provide specialized assets that foster firm-level differentiation.

## Proximity

Despite the virtual closeness enabled by information technology advances, innovation remains a "contact sport" that is best pursued through personal interactions at every stage in the game. In the initial stage of knowledge creation, collaborative research and development efforts are easier when one can interact on a personal basis. Tacit knowledge is more easily accumulated and shared within a small geographic area. As the emphasis on multi-disciplinary projects grows, direct interaction becomes even more important to ensuring the free flow of ideas and to avoiding misunderstandings among participants from different academic fields. The application of knowledge occurs faster when industry and academia maintain close working relationships in the real world, not the virtual one. Being close to suppliers and customers promotes faster responses to changes in market demand. The relative proximity of institutions within a metro region enables close interaction on a consistent basis and thus creates the ability to break down traditional functional barriers between developers, funders, and users of ideas. Proximity also supports the development of strongly linked industry clusters.

## Diversification and Differentiation

Success in the global economy requires both diversification and differentiation. At a macro level, our economy must support a diverse set of businesses to provide safety from sector-specific economic shocks. At a micro level, firms need to differentiate their offerings in order to gain competitive advantage. A regional economic strategy supports both these requirements. Regions — as opposed to individual cities or towns — offer the diversity of people, land types, and services to support a variety of businesses. As opposed to states, regions provide an environment in which firms can easily access and influence the development of specialized infrastructure, educational institutions, and workforce that support differentiation.

Every region in the country has the capacity to become an innovation hub, at least in some industries. But only a handful of areas have developed solid platforms to support innovation-based growth. For those regions that have not developed a strong innovation environment, it is critical for leaders to assess the strengths and weaknesses of their regional innovation ecosystem and understand the potential drivers of future innovation-based regional growth. More importantly, leaders must act on this information to improve their region's innovation platform.

# THE ECONOMIC DEVELOPMENT ADMINISTRATION / COUNCIL ON COMPETITIVENESS REGIONAL COMPETITIVENESS INITIATIVE

The Regional Innovation Initiative (RII) was designed to help regional leaders take action.

With a grant from the Economic Development Administration, the Council on Competitiveness launched the Regional Competitiveness Initiative in the summer of 2003. Over a two year period, the Council implemented regional initiatives with local partners in six areas: Central New Mexico, Northeast Ohio, Wilmington, Delaware, the Inland Northwest (Spokane - Coeur d'Alene area), West Michigan, and St. Louis. In addition, the Small Business Administration supported a similar project in Greater Rochester, New York.

In each region, the Council worked with local partners to implement a regional innovation assessment that evaluated regional strengths and weaknesses. Using a variety of analytical methods, including a specially designed regional innovation survey, the Council-led team completed the assessment. Across all seven regions, more than 1250 business leaders responded to the survey and over 180 community leaders were interviewed.

Guided by local steering committees of business, academic, labor, and non-profit leaders, each team selected up to three core priorities to address in each region. Existing local organizations or new leadership groups were recruited to take responsibility for implementing recommendations related to each core issue. These local leaders joined with Council representatives and national experts to share the findings of the regional innovation assessment at a regional competitiveness summit. Aimed at a broad array of community leaders, the summits served to disseminate findings and encourage participation by regional stakeholders in the core-issue action initiatives. In every region, groups are presently working to address the core issues identified by the RII.

In line with the goal to disseminate the initiative findings to a broad audience, the Council hosted the *National Summit on Regional Innovation* in Washington, D.C. on April 22, 2005. Further, two documents have been prepared: this findings report and a companion methodological guidebook. This report provides a description of the common regional challenges identified in the project and, drawing from the regional initiatives, offers examples of responses to those challenges. In addition, the report includes summaries from all of the sessions at the *National Summit on Regional Innovation*. The guidebook, ***Measuring Regional Innovation: a Guidebook for Conducting Regional Innovation Assessments***, provides a framework and step-by-step instructions for conducting a regional innovation assessment.

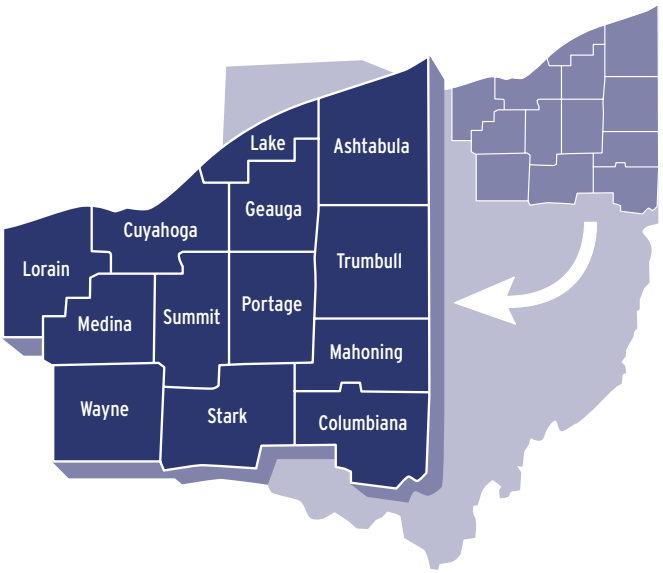
# FIVE COMMON CHALLENGES TO REGIONAL INNOVATION

The Regional Competitiveness Initiative revealed five important issues commonly faced by regions that endeavor to develop innovation-based economies:

1. Promoting regionalism
2. Building and retaining talent
3. Transitioning to advanced manufacturing
4. Networking knowledge assets
5. Energizing the entrepreneurial economy

# 1. Promoting Regionalism

A fundamental problem confronts many regions across the country: they aren't acting as regions. Economic development professionals increasingly recognize that multi-county areas are the appropriate unit for economic analysis and planning. However, there is still significant resistance to regional action. Much of the hesitancy comes from a structural challenge created by historically-drawn political boundaries. (Throughout much of the country, county lines were originally drawn to ensure all residents were within a day's mule ride to the county seat.) In recent years, new town boundaries and other taxing entities have only added to the number of political jurisdictions within regions. At a time when greater partnership is necessary, these political boundaries tend to hinder economic collaboration, particularly among public sector entities. The views of one Spokane business leader express the common challenge, "lack of collaboration among numerous, overlapping community organizations is dividing our leadership and our dollars."




Team NEO's Regional View

However, there are successful examples of regional collaboration. Often led by private sector entities, stakeholder groups are developing regional institutions. For example, in Northeast Ohio, leaders have created Team Northeast Ohio (Team NEO), a partnership of economic development organizations from thirteen counties. The philanthropic community has followed suit in creating the Fund for our Economic Future to "advance a common and highly-focused regional economic development agenda." Nearly 70 Northeast Ohio philanthropic organizations contributed to the fund, which will only support economic development initiatives with a regional scope.

Another example is the St. Louis region, where all of the major regional economic development entities have agreed to a "no-poaching" agreement to stop the practice of trying to relocate existing businesses to different cities within the same region. In West Michigan, the West Michigan Strategic Alliance has used innovative geographic information system technologies to create a "common framework" document that clearly depicts how the communities in the region are connected.

# **St. Louis, Missouri** Regional Competitiveness Initiative

Left to Right: Richard C. D. Fleming, St. Louis Regional Chamber and Growth Association; The Honorable David A. Sampson, U.S. Department of Commerce

**Steering Committee Leaders**

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**Mark S. Wrighton**
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*President and Chief Executive Officer, St. Louis Regional Chamber and Growth Association*

**Recommended Action Areas**

**Strengthening Regional Image**
Telling the true, positive St. Louis story – internally and externally

**Building an Entrepreneurial Environment**
Develop a deep entrepreneurial culture within the region

**Leveraging Business-University Ties**
Encourage greater collaboration among universities and between universities and the private sector

**Regional Response**

In response to the Council's recommendations to foster a more entrepreneurial environment, the St. Louis Regional Chamber and Growth Association expanded an existing program, Technology Gateway, to create Innovate St. Louis. Innovate St. Louis – in the vein of the Council's Innovate America Effort – aims to create an overarching regional business environment that is supportive of risk taking and entrepreneurship, and to advance the region's innovation-based economic development.

Prior to the Council's involvement in the region, St. Louis was considering a regional marketing effort in an attempt to dispel its image as still suffering a "hangover from the loss of manufacturing." The Council brought in two national experts to address local leaders on their experiences marketing Denver and Austin. The RGGA used the summit to generate regional support for the marketing effort. Building from the speakers' insights, regional leaders worked with a marketing firm to launch a 5-year, $20 million business expansion and regional image initiative: "St. Louis. Perfectly Centered. Remarkably Connected."

**St. Louis Regional Competitiveness Initiative Advisory Committee**

Mr. Robert L. Bagby, *A. G. Edwards & Sons, Inc.*
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Ms. Maxine Clark, *Build-A-Bear Workshop*
Mr. Michael J. Collins, *Tyco Healthcare/Mallinckrodt*
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Chancellor Mark S. Wrighton, *Washington University in St. Louis*
Mr. Douglas H. Yaeger, *The Laclede Group, Inc.*

## 2. Building and Retaining Talent

In a knowledge-based economy, the most important form of capital is human capital. People, not computers or firms, innovate. But many regions are having a hard time retaining an educated workforce. There are at least two elements to this challenge. First, as the economy relies less on low-skilled workers, a great need arises to develop retention programs for displaced workers with skills relevant to growth industries. Second, many communities are losing younger, educated citizens to more attractive regions. According to a recent census report, 243 U.S. Metropolitan Areas showed a net loss in migration of young college graduates, while only 75 showed a net gain.[6] (See Figure 1.) Even fewer rural areas have been able to maintain next-generation workers, as they are increasingly attracted to urban areas. One West Michigan business leader summarized the challenge well, "we have the workforce for the industries of today, but not for the industries of tomorrow."

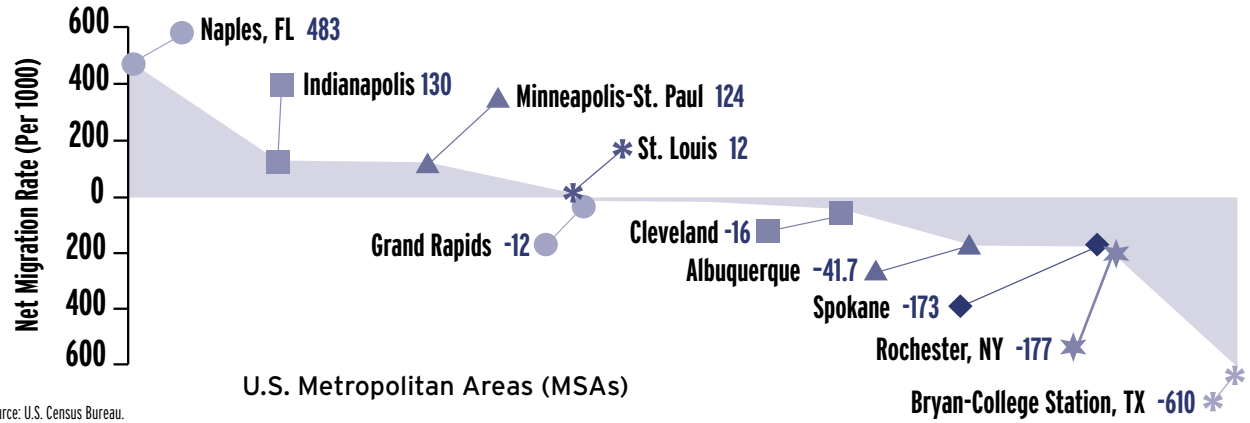
Regions are responding. Throughout the country, regional workforce boards are partnering with educational institutions and the private sector to create programs that are more responsive to the needs of both employers and workers. In the Jacksonville, Florida area, WorkSource, a six-county regional workforce development organization has developed a tiered, targeted service model that provides support to businesses based on size, industry, and specific workforce needs. Implementing this market segmentation approach has allowed WorkSource to more effectively allocate limited resources and drive increases in both employer and employee satisfaction. Their strategy is aligned with the regional economic development strategy, as they work closely with and share the same service area as the Jacksonville Regional Chamber of Commerce, the regional economic development organization.

Focusing on regional talent at an even earlier stage is Futures, Inc., a non-profit based in North Carolina. Futures, Inc. has developed a web-based program to help high school students evaluate potential careers based on their interests, and then introduces the students to local businesses offering internships or special training programs in their fields of interest. Community colleges work with companies to design training programs that will allow the firms to fill specific job openings with students trained in the specific skills required.

In Northeast Ohio, Philadelphia, Pittsburgh, Oklahoma City, and other regions, leaders have coalesced to develop "brain gain" strategies to attract and retain talented workers. Like the College 360° Program in Northeast Ohio, most of these programs focus on integrating college students into local business and civic life while they are still in school, as a method for turning out graduates with established connections to the region. Through internships and mentoring programs that lead to job placement, these efforts hope to keep students in the area after they graduate.

Figure 1

### Human Capital: Most U.S. regions lost young, educated residents in late 1990's




Source: U.S. Census Bureau.
Note: Rate calculated on a per thousand population basis, using 1995 as base year. Based on data from 318 MSAs. www.compete.org April 2005

6 United States Cenus Bureau, Migration of the Young, Single, and College Educated: 1995 to 2000, November 2003. **http://www.census.gov/prod/2003pubs/censr-12.pdf.**

# **Northeast Ohio** Regional Competitiveness Initiative

Left to right: Stephen Gage, CAMP; Thomas Waltermire, PolyOne; Luis Proenza, The University of Akron

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*Director, NorTech*

**Robert Farley**
*President, Team NEO*

**Charles Hickman**
*Director, Northeast Ohio Council on Higher Education (NOCHE)*

**Daniel Colantone**
*President and Chief Executive Officer, Greater Akron Chamber*

**Recommended Action Areas**

**Fostering Brain Gain**
Developing a regional strategy to attract and maintain talent

**Filling the Innovation Pipeline**
Strategies for strengthening regional university research efforts

**Leveraging Manufacturing and High Tech**
Linking Northeast Ohio's traditional strengths and emerging fields

**Regional Response**

*College 360°*

Responding to the Council recommendations, the Northeast Ohio Council on Higher Education (NOCHE), along with other partners, has launched the College 360° initiative. The program is a four-year, $5 million dollar cross-sector initiative to increase the region's supply of college-educated workers. Institutions supporting College 360° include 10 colleges and universities, 3 community colleges and an art institute. The region's collaborative brain gain strategy, College 360°, has received significant recent contributions from foundations, including $140,000 from the Cleveland Foundation and $100,000 from the Gund Foundation.

*Fund for Our Economic Future*

The Fund for Our Economic Future is an unprecedented collaboration within the philanthropic sector of Northeast Ohio to promote regional economic development. It was launched in February of 2004 in response to long-term challenges facing NEO such as business retention and expansion, technology innovation and entrepreneurship. The Fund aims to achieve its mission by convening key voices, measuring economic progress, and making grants to high impact economic development initiatives. The Fund is specifically focused on regional, innovation-based approaches and has been informed by the Council's work in Northeast Ohio and elsewhere.

**Northeast Ohio Regional Competitiveness Initiative Advisory Committee**

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Thomas A. Waltermire, *PolyOne Corporation*

## 3. Transitioning to Advanced Manufacturing

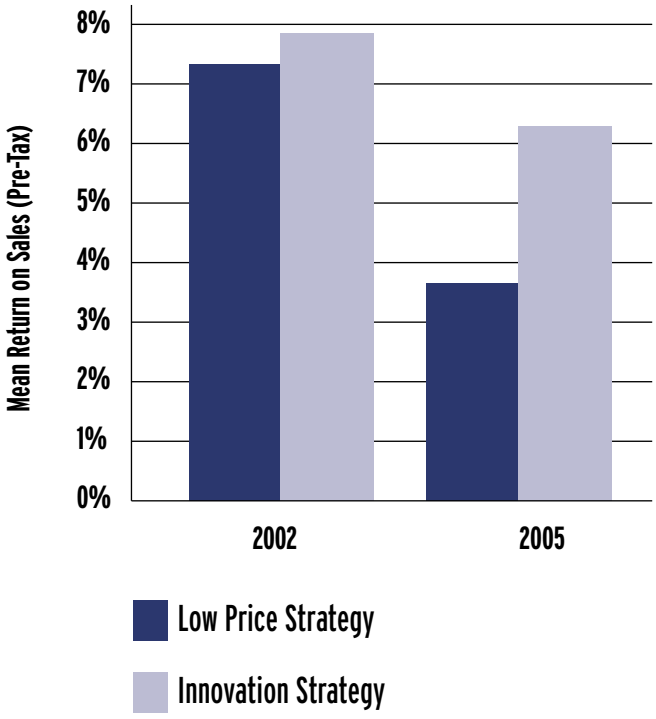
American manufacturing production is losing share to international competitors. Over the past five years, other countries, especially in Asia, have posted double-digit growth in manufacturing while the U.S. has stalled. U.S. firms have been shedding domestic jobs — particularly in traditional industries, such as textiles and garments and relocating in lower-cost countries. Communities with manufacturing-based economies have been confronted with the increasingly urgent need to respond to this trend. The answer is not to abandon manufacturing. Instead, regions should develop programs to help firms transition to advanced manufacturing strategies.

In the United States, there are few manufacturers that can compete in a global market based on low cost labor or in commodity products. To thrive, manufacturers must find some way to differentiate their products. Many options for differentiation exist; businesses can derive unique advantage from product design, production speed, logistics, the end-user experience, or superior marketing. But business cannot proceed as usual.

Forward-thinking manufacturers already understand this. In West Michigan, Herman Miller has partnered with Cascade Engineering, a plastics company, in the production of their newest chair, the Mirra. The office chair is designed to take advantage of two market trends: an appreciation for design and the growing environmental movement. The Mirra is both stylish and environmentally conscious; the chair is 98% recyclable and constructed of 42% recycled content.

Manufacturing Extension Centers, technical assistance organizations funded by the National Institute for Standards and Technology and state and local contributions, are playing an important role in helping small and medium manufacturers develop differentiated products. A Northeast Ohio extension center, CAMP, has developed a new set of programs specifically around product innovation to help local businesses improve the impact and speed of new product development. In Greater Rochester, community leaders have built the Infotonics Technology Center, a unique shared facility that offers technical support and specialized manufacturing facilities to help local optics firms make the transition from concept to prototype. Infotonics has been designed to help firms continually innovate by spurring cross-institutional collaboration and reducing the cost of experimenting with emerging technology.

### Average Return on Sales for Manufacturers Competing Primarily Through Low Price vs. Innovation




Source: J. Youtie and P. Shapira. Innovation in Manufacturing. Atlanta, Georgia: Georgia Institute of Technology, August 2005.
Note: Georgia Manufacturing Survey 2005, weighted responses from 639 Georgia-based manufacturers.

# **West Michigan** Regional Competitiveness Initiative

Left to right: Congressman Vernon Ehlers; Greg Northrup, West Michigan Economic Development Partnership; David Van Andel, IdeaSphere, Inc.

**Steering Committee Leaders**

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*Van Andel Institute and IdeaSphere Inc*

**Regional Partners**

Birgit Klohs
*President, The Right Place, Inc*

Greg Northrup
*Executive Director, West Michigan Economic Development Partnership*

**Recommended Action Areas**

Advancing Regionalism
Develop strategies to retain educated people in the region

Enhancing Entrepreneurial Platform
Educate community about keys to entrepreneurial success, catalyze angel groups

Strengthening Regional Human Capital
Region has experienced a "brain drain" of young, single, college educated workers

**Regional Response**

The West Michigan Strategic Alliance (WMSA), a co-sponsor of the regional summit, has created a community framework based on the regional findings and taken lead responsibility for pursuing collaboration between the business, government and education sectors. WMSA is in the final stages of creating a strategic partnership with Grand Valley State University. The partnership will allow WMSA access to the university's intellectual capital, allowing the Alliance to develop options using the critical thinking and analysis available to work on critical regional issues.

Building on the Council's recommendations, regional leaders recently submitted a successful proposal to the U.S. Department of Labor to receive $15 million to support the creation of a regional workforce innovations lab. Among other areas, the innovation lab will focus on supporting entrepreneurial efforts in the region.

Another initiative based on the Council's findings is the development of a "global school" – a new secondary school aimed at increasing international cultural appreciation and ties.

**West Michigan Regional Competitiveness Initiative Advisory Committee**

Jim Brooks, *West Michigan Strategic Alliance*
John Brown, *Stryker Corporation*
Larry Hines, *Hines Corporation*
Fred Keller, *Cascade Engineering*
Birgit Klohs, *The Right Place, Inc.*
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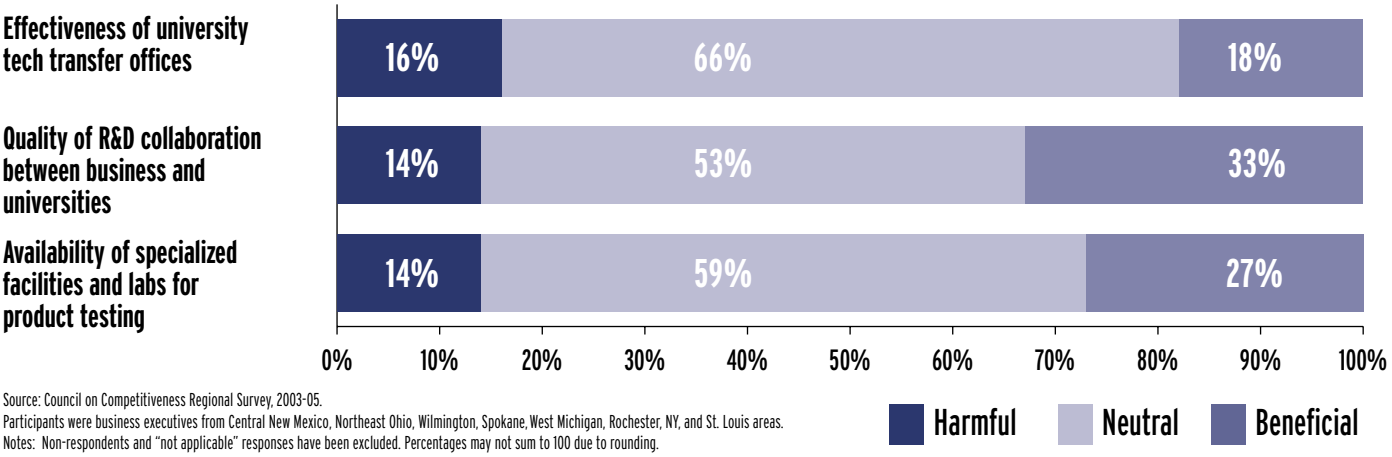
John Spoelhof, *Bank of Holland*
David Van Andel, *Van Andel Institute and IdeaSphere*
Gary Verplank, *Shape Corporation*

# 4. Networking Knowledge Assets

Figure 2

## Impact of Business-University Linkages on Regional Business Success




Source: Council on Competitiveness Regional Survey, 2003-05.
Participants were business executives from Central New Mexico, Northeast Ohio, Wilmington, Spokane, West Michigan, Rochester, NY, and St. Louis areas.
Notes: Non-respondents and "not applicable" responses have been excluded. Percentages may not sum to 100 due to rounding.

The Infotonics collaboration suggests a response to another of the common challenges faced by regions throughout the country: underutilization of regional innovation assets. Excellent research universities fail at commercialization because they are disconnected from local business communities. Entrepreneurs with great potential go unfunded because they cannot find – or do not have access to – venture capital providers. Workforce training institutions work diligently to help displaced workers, but fail to fully leverage their resources because employers find it cumbersome to work with the system or because they lack information about emerging industry needs. In sum, we often find deep knowledge assets unlinked, smart people not communicating, and strong institutions not sharing ideas and resources. In our regional innovation survey, only 18% of the 1250 business leaders said university technology transfer offices had contributed to their business success. Only 33% believed that quality of R&D collaboration between business and universities had contributed to regional business success. (See Figure 2.)

Regional business, civic, and political leaders have recognized the need to strengthen connections and collaboration. Following the model designed at UC-San Diego, leaders in the Inland Northwest have launched ConnectNorthwest, a program designed to serve as a "neutral broker" by providing coordinated access to the entrepreneurial resources needed for businesses to develop, grow, and become sustainable. As in Spokane, leaders in Central New Mexico and St. Louis have developed programs to make sure all the players in innovation-based businesses and institutions have a forum where they can meet and develop relationships. The leadership network and cross-fertilization of ideas and information across all elements of the local innovation eco-system are critical success factors.

In Northeast Ohio, 23 regional universities and colleges have joined to form the Northeast Council on Higher Education or NOCHE. Among other activities, NOCHE helps link universities to businesses interested in partnering with local universities, and facilitates collaborative research projects and technology transfer in the region. In Spokane, major colleges and universities, medical health service and research centers, biotechnology research and development institutions, and economic development organizations, have created the Spokane Alliance for Medical Research (SAMR). SAMR was created to bring additional research dollars to the region and has targeted sleep research as their primary focus for funding.

# **Inland Northwest** Regional Competitiveness Initiative

Left to right: Jon Eliassen, Spokane Area Economic Development Council; Randall Kempner, Council on Competitiveness

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**William Robinson**
*President, Whitworth College*

**Regional Partners**

**Lewis Rumpler**
*Chief Executive Officer, INTEC*

**Jon Eliassen**
*President, Spokane Area Economic Development Council*

**Thomas Reese**
*Economic Development Advisor, City of Spokane*

**Recommended Action Areas**

**Increasing and Connecting Research Assets**
Fully leverage wider regional knowledge assets and develop additional assets in the two-county area

Expanding Regional Image and Marketing
Broaden regional collaboration on internal and external campaigns

Enhancing Entrepreneurial Environment
Foster a more robust entrepreneurial culture and support institutions

**Regional Response**

INTEC, one of the Council's partner organizations in the Inland Northwest, recently spun-off its Connect Northwest initiative into an independent, nonprofit organization whose mission is to connect people, technology and capital to drive innovation. Through an array of programs, Connect Northwest provides regional entrepreneurs, early-stage business executives, and research communities with strategic and tactical solutions tailored to meet their evolving needs throughout the business lifecycle and growth of their companies. Connect Northwest is centered around four focus areas: business growth, capital formation, outreach and recognition programs.

In addition, leaders from Washington State University and Gonzaga University, two of the leading academic institutions in the region with Empire Health Services and Providence Health Care, operators of the two of the largest hospitals in Washington have been collaborating to create the Institute for Systems Medicine (ISM). The ISM will be a private non-profit research institute and as conceived will serve as a research organization that will leverage advances within systems biology, genomics, nanotechnology, and the health care resources of the eastern Washington area to develop and launch new therapies to patients, improving the health outcomes in the region. The ISM will serve as an early adapter of the principles and promise of systems biology to drive personalized medicine.

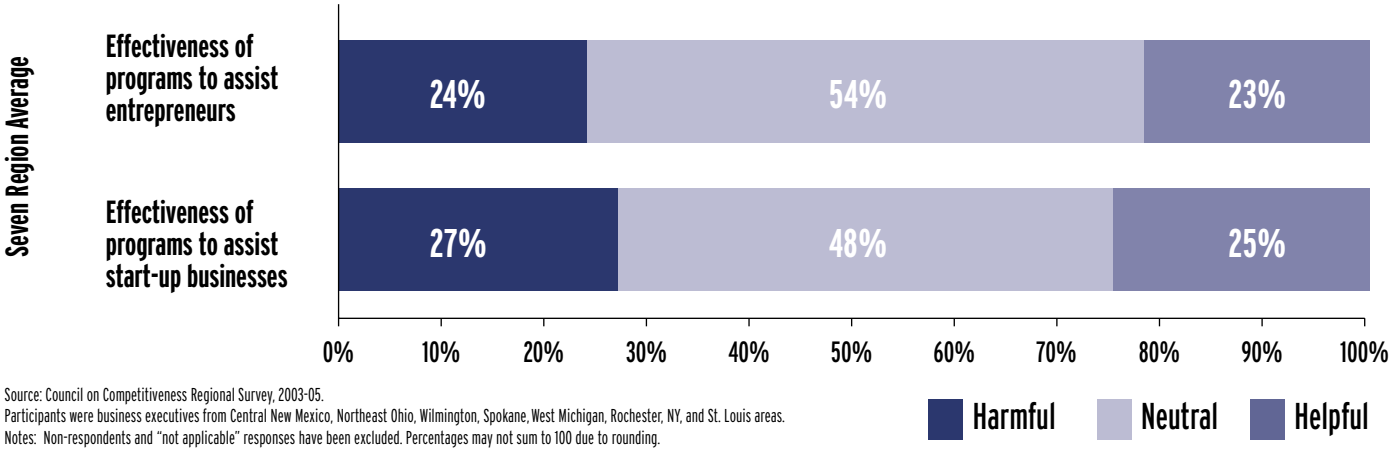
**West Michigan Regional Competitiveness Initiative Advisory Committee**

Ben Cabildo, *AHANA*
Jonathan Coe, *Coeur d'Alene Area Chamber of Commerce*
Dave Curry, *World Wide Packets*
J. Michael Davis, *Avista Laboratories*
Skip Davis, *Sacred Heart Medical Center*
Jon E. Eliassen, *Spokane Area Economic Development Council*
Thomas M. Fritz, *Inland Northwest Health Services*
Richard Hadley, *Spokane Regional Chamber of Commerce*
Stephen Jordan, *Eastern Washington University*
The Honorable Clay Larkin, *City of Post Falls*
Dr. Gary Livingston, *Community Colleges of Spokane*
Garman Luntz, *Empire Health Services*
Doug McQueen, *University of Idaho Research Park*
Scott L. Morris, *Avista Utilities*
Susan Pittman, *Wheatland Bank*
V. Lane Rawlins, *Washington State University*
Thomas A. Reese, *City of Spokane*
William P. Robinson, *Whitworth College*
Lewis Rumpler, *INTEC*
Eldonna Shaw Gossett, *Spokane Valley Chamber of Commerce*
Tom Simpson, *Northwest Venture Associates*
Robert J. Spitzer, *Gonzaga University*
Patrick Tam, *SIRTI*
Beth Thew, *Secretary, Spokane Labor Council*
Thomas E. Turner, *President and Chief Executive Officer, Itronix*
The Honorable James E. West, *Mayor, City of Spokane*

## 5. Energizing the Entrepreneurial Economy

Figure 3

### Impact of Entrepreneurial Programs on Regional Business Success




Source: Council on Competitiveness Regional Survey, 2003-05.
Participants were business executives from Central New Mexico, Northeast Ohio, Wilmington, Spokane, West Michigan, Rochester, NY, and St. Louis areas.
Notes: Non-respondents and "not applicable" responses have been excluded. Percentages may not sum to 100 due to rounding.

Jobs being created in the U.S. today are overwhelmingly coming from small and medium sized businesses.[7] For many regions, supporting entrepreneurship has become the best option for replacing jobs lost as larger firms downsize. However, in the regions we studied, there was still significant room for improvement in building entrepreneurial support services. One consistent concern voiced in the study regions was a lack of venture capital funds. However, the more urgent problem that emerged was a lack of deals and strong entrepreneurs that merit venture funding. While programs exist in most regions to improve the level of entrepreneurship, only 23% of our survey respondents felt that programs aimed at assisting entrepreneurs were highly effective and only 25% felt that programs aimed at supporting start-up businesses were highly effective. (See Figure 3.) Part of the explanation for these low levels of satisfaction was simply an unawareness of existing programs. Further, many business leaders explained that they did not see these programs as very important because there is a dearth of entrepreneurs (or people interested in becoming entrepreneurs) in their regions.

This raises perhaps the most fundamental challenge facing regions hoping to foster more entrepreneurial efforts: the lack of an entrepreneurial culture. Work by the National Commission on Entrepreneurship and the Council on Competitiveness has identified a variety of attitudes that are important to support a vibrant entrepreneurial culture: appreciation for difference and diversity, willingness to collaborate, and appreciation for risk-taking. Communities that support innovators and innovation embrace people with diverse backgrounds, understand that failure is part of the business process, and encourage businesses, even in the same industry, to collaborate when possible.

Throughout the U.S., many, if not most, communities do not meet this description. Across the seven study regions, only 26% of the survey respondents felt their "regional business culture understands failure as part of the innovation and learning process." The same percentage felt that business leaders "proactively share information and resources when possible." (See Figure 4.)

Increasingly, regions are addressing this cultural and institutional challenge in hopes of attracting and retaining entrepreneurial firms. Through mentorship programs and annual entrepreneurial award contests, many communities have developed programs to provide private support and public recognition to entrepreneurs.

In St. Louis, the Regional Chamber and Growth Association has been actively involved in supporting these sorts of programs, and has taken a step further by playing a key role in forming the Arch Angels, the largest angel capital group in the region. Washington University in St. Louis was one of eight universities selected in 2004 by the Kauffman Foundation to participate in its Kauffman Campus Initiative. The Kauffman initiative is an effort to spread entrepreneurship beyond its traditional domain of the business and engineering schools to the entire university and its community partners. In response to our project, business leaders in the State of Delaware have created the Delaware Entrepreneurial Action Group to better integrate disparate entrepreneurial programs and promote coordinated efforts by both large and small companies to support entrepreneurs in the region.

7 According to the Center for Economic Studies, in the decade of the 1990s and early 2000s, small businesses created, on average, 60-80% of net new jobs every year. (Center for Economic Studies, Endogenous Growth and Entrepreneurial Activities, January 2003. **http://webserver01.ces.census.gov/index.php/ces/1.00/cespapers?down_key=101665**).

# **Wilmington, Delaware** Regional Competitiveness Initiative

Left to right: Mayor James Baker of Wilmington, DE; Charles O. Holliday, DuPont; Governor Ruth Ann Minner

**Steering Committee Leaders**

**Bruce Hammonds**
*Chairman and Chief Executive Officer, MBNA Bank*

**Charles Holliday**
*Chairman and Chief Executive Officer, DuPont*

**Regional Partners**

**Richard Heffron**
*Acting President, Delaware State Chamber of Commerce*

**Judy McKinney-Cherry**
*Director, Delaware Office of Economic Development*

**Recommended Action Areas**

**Fostering an Entrepreneurial Environment**
Strategies to bolster the development of entrepreneurs and entrepreneurial ventures in the region

Building World-Class Business-Higher Education Partnerships
Strategies to strengthen and fully leverage business-academic partnerships to support regional economic development

**Regional Response**

The Delaware Entrepreneurial Action Group (EAG) was formed in 2004 to address the goal of energizing the entrepreneurial environment. The EAG consists of 23 representatives selected across private, public, academic and quasi-public/private sectors. The group includes city and state government officials, universities, a biotech park CEO, successful entrepreneurs, venture capitalists and a patent attorney. The EAG has met six times and will finalize a business plan and a roadmap for moving forward in the first quarter of 2006.

EAG's assessment of the region concluded that:

- A 10% boost in Delaware GDP came from new and emerging businesses;
- A network of angel funds focused on Delaware opportunities is providing seed capital to emerging businesses, and that the state has become a magnet for venture capital;

EAG's action plan includes:

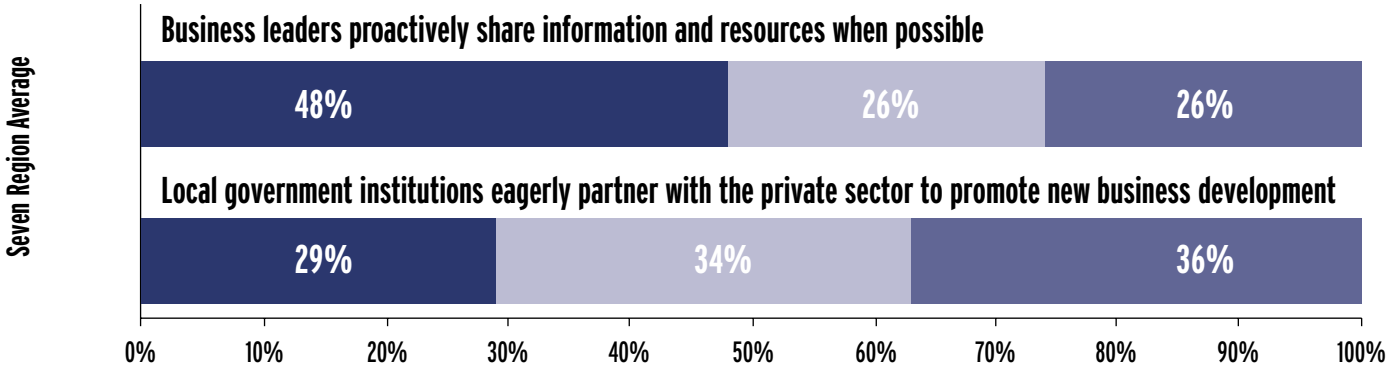
- A public/private partnership strategy
- Leveraging regional assets, including its proximity to Philadelphia, in the regional development strategy

**Wilmington, Delaware Regional Competitiveness Initiative Advisory Committee**

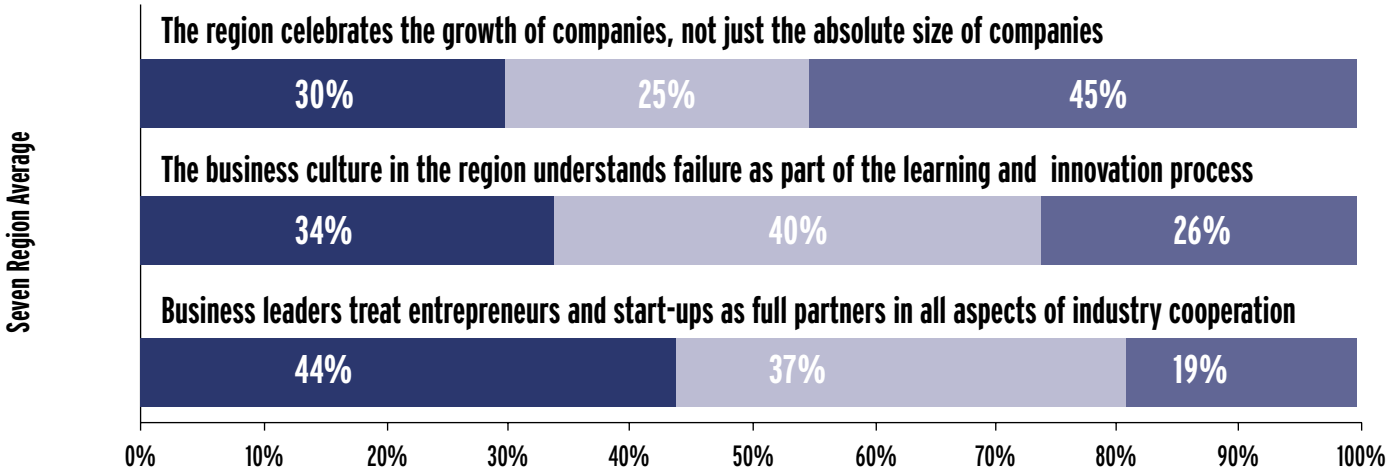
Antoine Allen, *Metropolitan Wilmington Urban League*
Beverley Baxter, *The Committee of 100*
Judy McKinney-Cherry, *Delaware Economic Development Office*
John Czerwinski, *Plumbers & Pipefitters*
Ernest J. Dianastasis, *Computer Aid Inc*
Representative Joseph DiPinto, *Delaware State Legislature*
E. Andrew Disabatino, *Edis Company*
Orlando George, *Delaware Technical & Community College*
Deborah Hamilton, *Washington Office of the Governor*
Bruce Hammonds, *MBNA America Bank*
Richard Heffron, *Delaware State Chamber of Commerce*
Charles O. Holliday, *DuPont*
Michael Houghton, *Morris, Nichols, Arsht & Tunnell*
Robert Laskowski, *Christiana Care Corporation*
Alan Levin, *Happy Harry's Drugstores*
Jack Markell, *State of Delaware*
Richard Pryor, *City of Wilmington Economic Development*
Martin Schoenhals, *Wilmington Savings and Fund Society*
Fred Sears, *Delaware Community Foundation*
James Wolfe, *Daimler Chrysler Corporation*
William Wood, *Wood, Byrd & Associates, Inc*

Figure 4

## Business Culture: Do regional stakeholders collaborate?




## Business Culture: Do regional leaders appreciate the entrepreneurial process?




Source: Council on Competitiveness Regional Survey, 2003-05.
Participants were business executives from Central New Mexico, Northeast Ohio, Wilmington, Spokane, West Michigan, Rochester, NY, and St. Louis areas.
Notes: Non-respondents and "not applicable" responses have been excluded. Percentages may not sum to 100 due to rounding.


## Conclusion

Today, innovation is occurring at an accelerated rate across the globe. To maintain the United States' position as the global economic leader — and thereby ensure national prosperity — U.S. regions must develop new strategies. It is no longer possible to expect traditional advantages like location, natural resources or low-skilled labor to drive economic growth. In order to continue nurturing our knowledge-driven economy, our regions must develop fertile environments for firms and people to innovate.

National and state policies that impact economic development should be designed to reflect this reality and support regional action. Regional leaders should respond by breaking down old political and cultural barriers to cooperation. Investments in innovation assets — starting with human capital — should be integrated into comprehensive strategies to fully leverage the collective strengths of regional communities. Instead of accepting the decline of U.S. manufacturing, national, state, and regional actors should encourage the development and commercialization of more innovative products and services. Entrepreneurship, both in existing companies and start-up ventures, must be promoted, as attitudes that discourage risk-taking are abandoned.

Overcoming these challenges to regional innovation will not be easy, but the global success of U.S. regions like San Diego, Raleigh-Durham, and Austin show that it is achievable. The efforts of the seven project regions demonstrate that even areas challenged by economic downturns can successfully pursue the opportunities offered by innovation-based growth strategies. Our hope is that the Council's Regional Competitiveness Initiative will inform and assist regions as they work to strengthen their own innovation capacity and support our nation's collective prosperity.

# **Central New Mexico** Regional Competitiveness Initiative

Left to right: Mayor John Hooker, Village of Los Ranchos; Paul Shirley, Qynergy; Congresswoman Heather Wilson

**Steering Committee Leaders**

Paul Shirley
*President, Qynergy*

Larry Willard
*President and Chief Executive Officer, Wells Fargo, New Mexico*

**Regional Partners**

Lawrence Rael
*Executive Director, Middle Rio Grande Council of Governments*

Michael Skaggs
*President and Chief Executive Officer, Next Generation Economy, Inc.*

**Recommended Action Areas**

Increasing Entrepreneurship Education and Incubation
Address need to grow a base of local entrepreneurs and develop a series of support programs to assist new business formation and success

Building Connections to Support Innovation
Address lack of interaction between innovation actors: financial community, legal community, entrepreneurs, educational institutions and R&D centers in region

Incorporating Innovation into Traditional Industries
Address opportunity to strengthen local artisan industry by organizing a cluster group focused on innovation

**Regional Response**

In response to the Council's work, Next Generation Economy Inc. has completed an entrepreneurial resource-mapping project, documenting qualified professional support services for entrepreneurs. The resources are available online and the project is being expanded to cover statewide resources through a partnership with Los Alamos National Laboratories, the Regional Development Corporation of Northern New Mexico and New Mexico State University.

The University of New Mexico has expanded its entrepreneurial efforts, beginning a series of annual programs including *The Creativity Symposium* which has drawn over 450 freshmen and sophomore participants, a day long VenCamp to train students in the steps to form an entrepreneurial enterprise, and a $25,000 business plan competition. UNM has also partnered with NextGen and Intel to create a fully equipped clean room for the use of the state's technology companies.

A major artisan effort has been developed in response to local artists' needs for market connections. Seven *Artisan Business Enhancement Workshops* have been held throughout the state, focusing on helping artisan businesses to grow and prosper.

**Central New Mexico Regional Competitiveness Initiative Advisory Committee**

Mike Albers, *City of Albuquerque Economic Development*
Vaden Bales, *Wrangler Partners*
Mark Benak, *InLight Solutions*
Randy Burge, *State of New Mexico, Economic Development Office*
Mike Dewitt, *Sandia National Laboratories*
Dale Dekker, *Dekker/Perich/Sabatini*
Julie Dreik, *Congresswoman Heather Wilson*
Dave Durgan, *Valley Ventures*
Brian Foster, *University of New Mexico*
Bill Garcia, *Private Investor*
Michael Glennon, *TVI-Community College*
Jill Halverson, *Senator Jeff Bingaman*
Brad Key, *Science & Engineering Associates*
Jim McNally, *InLight Solutions*
Jerry Pacheco, *State of New Mexico*
Lawrence Rael, *Middle Rio Grande Council of Government*
Paul Shirley, *Qynergy*
Mike Skaggs, *Next Generation Economy, Inc.*
Tom Stephenson, *Murphree Venture Partners*
Gary Tonjes, *Albuquerque Economic Development*
Jessica Turnley, *Galisteo Consulting Group*
Pat Vanderpool, *Senator Pete Domenici*
Wythe Walker, *NM Business Weekly*
Chuck Wellborn, *Wellborn Strategies*
Larry Willard, *Wells Fargo, New Mexico*

# INNOVATE AMERICA

## The 2005 National Summit on Regional Innovation

Proceedings

# INTRODUCTION


Left to right: The Honorable Deborah L. Wince-Smith; The Honorable Emily Stover DeRocco; The Honorable David A. Sampson

"The National Innovation Initiative defines innovation as the intersection of invention and insight, leading to the creation of social and economic value." –Deborah Wince-Smith

On April 22, 2005 the Council on Competitiveness convened *Innovate America: the National Summit on Regional Innovation* at the Capital Hilton in Washington, D.C. More than 100 economic development professionals from the public, private, educational and non-profit sectors gathered to share insights and learn from leaders on innovation-based economic development.

The main goals for the summit were to share best practices from the seven regions engaged during the first two years of the Council's Regional Competitiveness Initiative, and to link regional lessons to the broader national innovation agenda.

The summit featured keynote speeches from Deputy Secretary of Commerce, David A. Sampson, and Council President, Deborah L. Wince-Smith. We were also honored to have Assistant Secretary of Labor Emily Stover DeRocco join for a panel discussion. Many of the panel speakers represented the seven regions studied, and others brought international expertise in various areas of regional development.

The summit was designed as a working session for economic development practitioners and centered around four main areas: energizing the entrepreneurial economy, leveraging regional knowledge assets, cultivating the next generation of innovators, and strengthening America's manufacturing capacity. Deborah Wince-Smith welcomed participants and gave opening remarks, followed by a plenary panel on the importance of thinking regionally. After a short break, Randall Kempner, Vice President of Regional Innovation at the Council, shared cross-cutting findings from the seven regions, and later in the afternoon, led a discussion on the regionally relevant recommendations from the National Innovation Report, *Innovate America*. Prior to lunch, participants split into two groups to attend the first set of concurrent roundtable discussions, and attended a second set following lunch. Deputy Secretary Sampson gave the luncheon keynote and Deborah Wince-Smith closed the event in the afternoon.

*Summaries of all of the sessions are included in the following pages. Full presentations are available on the Council's website at* ***www.compete.org/nri.***

# Innovate America: The National Summit on Regional Innovation April 22, 2005

## Detailed Agenda

| | |
|---|---|
| 8:00 a.m. | Registration and Continental Breakfast |
| 8:30 a.m. | Welcome and Opening Remarks<br>• Deborah L. Wince-Smith, President, Council on Competitiveness |
| 9:00 a.m. | National Innovation Initiative: The Regional Imperatives<br>Moderator: Charles C. Evans, Vice President, National Innovation, Council on Competitiveness<br>• The Honorable Emily Stover DeRocco, Assistant Secretary of Labor for Employment and Training<br>• Luis M. Proenza, President, University of Akron<br>• Richard C. D. Fleming, President and Chief Executive Officer, St. Louis Regional Chamber and Growth Association |
| 10:00 a.m. | Break |
| 10:15 a.m. | Cross-Cutting Regional Innovation Assessment<br>• Randall T. Kempner, Vice President, Regional Innovation, Council on Competitiveness |
| 11:00 a.m. | Concurrent Roundtable Discussions<br>*Regional Hotspots: Energizing the Entrepreneurial Economy*<br>Moderator: Jonathan Ortmans, President, The Public Forum Institute<br>• Richard A. Bendis, President and CEO, Innovation Philadelphia<br>• Robert W. Coy, Jr., Senior Vice President, St. Louis Regional Chamber and Growth Association<br>• Ernie Dianastasis, Managing Director, CAI and Chair, Delaware Entrepreneurial Action Group<br>• Michelle Moore, Vice President, U.S. Green Building Council<br>*Leveraging Regional Knowledge Assets: Business – University – Community Linkages*<br>Moderator: C. Michael Cassidy, President, Georgia Research Alliance<br>• Jeffrey A. Finkle, President, International Economic Development Council<br>• R. Sean Randolph, President, Bay Area Economic Forum<br>• Phillip A. Singerman, Executive Director, Maryland Technology Development Corporation<br>• Michael E. Skaggs, President, Next Generation Economy, Inc. |
| 12:30 p.m. | Lunch<br><br>Keynote Address: The Honorable David A. Sampson,<br>Deputy Secretary, U.S. Department of Commerce |
| 1:30 p.m. | Concurrent Roundtable Discussions<br>*Cultivating the Next Generation of Innovators: Building and Retaining Talent*<br>Moderator: Dan Berglund, President, State Science and Technology Institute<br>• Barbara Bolin, Special Advisor for Workforce Development to Governor Mark Warner, Commonwealth of Virginia<br>• Stuart A. Rosenfeld, President, Regional Technology Strategies<br>• Ernie Dianastasis, Managing Director, CAI and Chair, Delaware Entrepreneurial Action Group<br>• Monica Turoczy, Director, College 360 Initiative, Northeast Ohio Council on Higher Education<br>*Strengthening America's Manufacturing Capacity: Regional Advanced Manufacturing Initiatives*<br>Moderator: William G. Morin, Director of Governmental Relations, Applied Materials<br>• Richard B. Jarman, Director, Technology Partnerships, Eastman Kodak<br>• Jacques Koppel, Managing Director, 360vu<br>• Richard F. Pearson, President and CEO, National Center for Manufacturing Sciences<br>• Gary Stanley, Materials Team Supervisor, Office of Materials and Machinery, U.S. Department of Commerce |
| 3:00 p.m. | Plenary Discussion: Toward a Regional Innovation Agenda<br>Moderator: Randall T. Kempner, Vice President, Council on Competitiveness |
| 4:00 p.m. | Closing Remarks<br>• Deborah L. Wince-Smith, President, Council on Competitiveness |

## Session Summaries

# WELCOME AND OPENING REMARKS

**Deborah L. Wince-Smith**

Deborah Wince-Smith spoke on the importance of innovation in keeping the United States competitive in the global economy and outlined that Council on Competitiveness' National Innovation Agenda.

*Innovation will be the single most important factor in determining America's success through the 21st century. Studies show that total factor productivity, which is generally attributed to innovation, was responsible for 47% of U.S. economic growth between 2000 and 2004. Innovation is more than just a driver of economic growth; innovation has always been the way people solved great challenges facing society. The world market has opened up and globalized while the importance of innovation has spread. In less than 20 years, many nations have embraced market economies and moved toward democratic political norms. This means they are now able to compete on traditional cost and quality terms. The playing field is leveling, and the barriers to innovations are falling.*

*Other nations understand that innovation is the path to prosperity, and their governments are pursuing aggressive strategies to strengthen their innovation capacity and to link innovation with economic development. America's long-standing lead in innovation and entrepreneurship is by no means assured. We must create an environment in which innovation can flourish. This challenge is why the Council launched the National Innovation Initiative (NII) in October 2003. The NII engaged more than 500 leaders and experts across industry, academia, government, and labor, to generate a set of actions for companies, universities, community colleges, state and local government, and entrepreneurs, to ensure that the U.S. stays at the leading edge of innovation. The Council's Innovate America report is our roadmap to achieving this goal.*

*The Innovation Agenda has three key platforms: talent, investment, and infrastructure. Talent addresses our human capital needs, such as building our base of scientists and engineers, catalyzing the next generation of innovators, and empowering workers to succeed in the global economy. The investment area addresses the balance between risk and reward and the incentives for people and institutions to invest in innovation. Priorities for this action area are: revitalizing frontier and multidisciplinary research, energizing the entrepreneurial economy, and reinforcing risk-taking and long-term investment. The third area, infrastructure, covers not only the*

> "Regions are where the rubber meets the road when it comes to innovation." –Deborah Wince-Smith

*physical infrastructure that supports innovation, but also the political, regulatory, and legal infrastructure that facilitates innovative behavior. Infrastructure priorities include: creating a 21st century intellectual property regime; strengthening America's manufacturing capacity; and building an innovation infrastructure with the healthcare system as a test bed.*

*As you can see, the National Innovation Agenda is quite broad, covering the range of elements that makes up the national innovation ecosystem. The Council and its members are committed to implementing this agenda over the coming three years by applying a four-pronged strategy focused on: national innovation, regional innovation, global innovation and innovation research. The Council will continue to serve as a systems integrator, channeling diverse efforts toward a common goal and building a global network of innovation leaders and supporters. As part of our continuing outreach, we will be convening a series of regional summits around the country, where we will continue to learn from others' experiences and extend our national innovation network.*

*As Americans, we know that our biggest competitor is no longer the next county over, or even another America city. We are now competing against regions that we may not be able to find on a map. The solution to this daunting, global problem is for talented, committed people like you to get together and get active in your regions and communities, and to build success — one school, one company, and one job at a time. Our job at the Council is to help you achieve this goal by laying out a national policy agenda, researching the issues and working with regions to build alliances and catalyze growth.*

# NATIONAL INNOVATION INITIATIVE: THE REGIONAL IMPERATIVES

**Moderator**

Charles C. Evans
*Vice President, National Innovation Initiative, Council on Competitiveness*

**Panelists**

The Honorable Emily Stover DeRocco
*Assistant Secretary of Labor for Employment and Training*

Richard C.D. Fleming
*President and Chief Executive Officer, St. Louis Regional Chamber and Growth Association*

Luis M. Proenza
*President, The University of Akron*

**The Honorable Emily Stover DeRocco**

The Honorable Emily Stover DeRocco discussed the shortcomings of the current U.S. job training program, and the Employment and Training Administration's plan to address them.

*Today our country finds itself in a situation unlike any we have experienced in our history. Advances in the fields of communication, technology, and travel have torn down the barriers to global commerce and removed borders from the global economy. Competition now comes not only from the company across the street, but also from the company across the ocean.*

*Up until very recently, Americans could find work and build successful careers with no more than a high school education. They could go down to the local mill and with physical strength and a strong work ethic, build a career that would earn them enough to participate in the American dream.*

*Or they could enter a company training program, where for the first six months or year on the job, they would learn the skills required to do their job. Then they would stay with that company long enough to earn a gold watch and retire with a nice pension.*

*Today, that world has vanished. The jobs in today's mills require a detailed knowledge of computers and an understanding of integrated systems. And neither mills nor companies can afford the luxury of extended training programs. If a worker isn't productive, then he or she considered a liability, and liabilities must be cut to remain competitive in the global economy.*

*While education is certainly the foundation, the Council's NII report has identified a specific type of education called experiential learning that is more effective than traditional classroom education and memorization.*

*The post-secondary model of experiential learning is a term many of us are familiar with: apprenticeship. Traditionally used in the construction and manufacturing trades, the Department of Labor is helping expand the use of apprenticeship into cutting-edge industries such as biotechnology and geospatial technology.*

"As the Council's Innovate America report states, 26 of the 30 fastest growing jobs in the United States require education beyond high school." –Assistant Secretary Emily Stover DeRocco

*Using the experiential learning model, students learn algebra and trigonometry and statistics while applying that knowledge to the building of bridges and homes. It is based on the idea that if a student can see how certain knowledge applies in the real world, he or she is much more likely to learn and understand a subject when compared to studying in the abstract.*

*While improving high school education is certainly important, we all know that it takes more than a high school education to succeed in the jobs of tomorrow. As the Council's report states, 26 of the 30 fastest growing jobs in the United States require education and training beyond high school. These are the jobs that will drive the innovation in the world economy, and determine which country will lead that economy.*

*The United States has an outstanding university system that educates and trains millions of students a year. But even with thousands of universities across the country, only about a third of high school students go on to complete a 4-year bachelor's degree. This leaves millions of young adults lacking the skills needed to build a successful career.*

*The U.S. also has a system in place that can help these individuals and other workers whose skills have become obsolete as the economy transforms; it is called the workforce investment system. Each year, the taxpayers invest over $15 billion in that system. Unfortunately they are getting very little return on their investment. There are three major problems with the job-training program.*

*First, the system has been created piecemeal, with decades of legislation targeted at specific subgroups. This has resulted in artificial divisions between training programs, costly duplication of administrative expenses, and overly rigid and confusing eligibility requirements.*

*Second, there is little accountability built into the system to evaluate effectiveness. This leads to a system where $4 billion only trains 200,000 workers.*

*And third, there are few meaningful partnerships between employers, educators, and the job training system, making it difficult to design training programs that meet industry needs.*

*In an attempt to fix this system – and make it relevant in the 21st century economy – President Bush has proposed a sweeping reform. This includes consolidating the four, major funding streams under the Workforce Investment Act, and providing a state option to consolidate up to five additional programs.*

*The only way to make the job training system effective is to give it the flexibility to meet the constantly changing needs of today's businesses. That is simply not possible in a system with seventeen different funding streams, each with its own rules, regulations, and bureaucracy, all designed and managed in Washington.*

*Our vision for the job training system is simple. It is for a flexible, integrated system with strong state leadership and effective local execution and customization. It is a system where Governors can move resources to address regional needs and mayors and county commissioners can serve employers to preserve jobs, rather than sit helplessly by until those jobs have already disappeared. And it is a system with the leadership and vision to act as a catalyst for economic development.*

*In exchange for this flexibility, our demands are actually quite simple. The people it serves should find a good job with good wages and career opportunities. And the goal is to place 100% of the people served into those good jobs.*

*Over the past two years, I have met with hundreds of executives in a dozen of our fastest growing industries. Nearly every one of them tells me that they are unable to find the talent they need to meet their business needs. If we do not reform our nation's schools and our nation's job training programs to provide them with that talent, we can be sure that India and China and our competitors to the East will.*

**Dr. Luis M. Proenza**

Dr. Luis Proenza discussed the imperative for regionalism in economic and innovation capacity development and the increasingly significant role of higher education.

*Regional efforts, as compared to local, national and global efforts, may have the greatest impact in driving economic development. The Northeast Ohio experiences of the last century show that in spite of some difficult times for the economy, regional collaborative efforts are exceptionally*

"Regional collaborative efforts are exceptionally effective in driving innovation." –Luis Proenza

*effective in driving innovation. Higher Education provides an effective framework for regional innovation capacity development through its roles of education, workforce development, knowledge-creation, technology transfer and commercialization. Higher education impacts a region socially and economically by attracting students, faculty and firms and by providing human and other resources and services to the community. Universities foster a community culture of learning and innovation. Higher education interactions with government, industry and commercial enterprises across many areas provide numerous mutual advantages including internships and joint research and development. University supported public/private partnerships can create widespread change in a region. An excellent example is the National Polymer Innovation Center at the University of Akron. The Center develops advanced solutions for efficient and rapid production processes that have direct application in, and are transferred to, the polymer industry.*

*Technology and industry sectors share cross-cutting areas of focus that can serve as a framework for state/regional discussions. In Northeast Ohio, industries from bioscience, information technology, power and propulsion, to electronics, polymers and nanotechnology all share concerns in the areas of research and technology development, innovation and commercialization, entrepreneurship and early-stage capital, manufacturing, talent and workforce development, as well as company attraction and leveraged investments. Through NorTech, the Northeast Ohio Research and Technology Council, regional universities and industry collaborate to address the associated challenges and opportunities.*

*The 21st Century Innovation Economy offers several opportunities for universities in three main areas identified by the NII: talent, investment and infrastructure. The talent area covers collaborative "industrial assistantships," professional science masters degrees in industrial innovation, creating knowledge in innovation, and innovative curricula to optimize the innovation ecosystem. In the areas of investment, universities and commercial interests can better align their strategic partnerships, help regions and states to understand federal and global research economy and incentivize innovation across all disciplines. Infrastructure is the third area and covers expanding alliances with other universities and businesses, as well as linking the intellectual property expertise and services with the science establishment.*

**Richard C.D. Fleming**

Dick Fleming shared the many lessons he learned during years of working to create an entrepreneurial economy in St. Louis, Missouri – from the importance of networking to strengthening advanced manufacturing.

*Building an entrepreneurial culture that permeates the community's businesses, universities, and governments has required a cultural shift that is still in process, and includes recognizing the importance of innovation and entrepreneurship to economic growth. The region needs to continue to find ways to celebrate successful entrepreneurs as much as it does successful Fortune 500 executives and inherited wealth. The importance of entrepreneurs should also be reflected in the social structure and the leadership of the region's civic associations. We also need to recognize the value of professors who have a strong desire to commercialize technology as well as publish in research journals.*

*Innovation feeds on the free flow of information, thus the importance of a networked community – especially firm-to-firm and firm-to-university. The involvement of people from different segments of the community creates a buzz that can be very powerful and self-reinforcing. The efforts of the Technology Gateway Council, the Missouri Venture Forum, the two technology incubators, and the Skandalaris Program at Washington University are building these networks. More needs to be done.*

*A strong state government partner is key to developing an innovation-based economy. Unfortunately, the state of Missouri has not been a strong partner in developing an innovation economy due to a lack of vision, will and political consensus. Its incentive programs are designed for an industrial economy. Twenty years after many state pension funds began to invest in in-state venture capital funds prudently, the state of Missouri's state and teachers' pension funds continue to resist. It will be difficult for the region to develop a flourishing, innovation-based economy in the absence of a strong state partner.*

*It is important to attract and retain talented people, especially serial entrepreneurs in a region. In St. Louis, on the positive side, we have learned that senior executives from Fortune 500 companies in the region can successfully lead start-up companies, and our venture capitalists have had*

"Innovation feeds on the free flow of information." –Dick Fleming

*success attracting CEOs to St. Louis from other regions. On the negative side, many regional start-up companies are concerned about the availability of experienced, mid-level talent to staff their second wave of growth. There is a strong link between an entrepreneurial, upwardly mobile and open culture, and the ability of the region to attract and retain top talent. The high cost of living on the East and West Coasts is driving talent to mid-western cities like St. Louis, if they offer opportunity.*

*A region needs to develop strong connections between its ability to attract research-intensive, mature companies, and the presence of a vibrant entrepreneurial community. This is especially true in life sciences, where the prevailing business model calls for mature biotech companies to place R&D operations in regions with a density of start-up companies. Apparently, these firms gain competitive advantage from being in close proximity to innovative companies. A regional concentration of start-up companies does not seem to be as critical to the location decision of biotech manufacturing facilities.*

*The recognition that entrepreneurial ventures in information technology and biotechnology increasingly cluster together is an important one to understand. One study found that the intertwining of different technologies' evolutionary paths has made it increasingly difficult to distinguish between computing and biotechnology skills, as the blending of skills in the variety of disciplines that are contained under both broad headings becomes more essential and more commonplace. This suggests that the region needs to continue to develop its IT cluster.*

*Finally, regions need to find ways to strengthen their advanced manufacturing base. Manufacturing has been, and continues to be, a central pillar of the region's economy. Those manufacturing firms that survive will do so through the application of technology and organizational innovations. The region needs to find ways to facilitate the adoption of new technologies and methods for manufacturing, including strengthening the connections between manufacturing firms and universities.*

# REGIONAL HOTSPOTS: ENERGIZING THE ENTREPRENEURIAL ECONOMY

"Angel investors provide about 90% of the seed and early-stage equity capital for start-up entrepreneurs." –Rich Bendis

**Moderator**

Jonathan Ortmans
*President, The Public Forum Institute*

**Panelists**

Richard A. Bendis
*President and CEO, Innovation Philadelphia*

Robert W. Coy, Jr.
*Senior Vice President, St. Louis Regional Chamber and Growth Association*

Ernest Dianastasis
*Managing Director, CAI and Chair, Delaware Entrepreneurial Action Group*

Michelle Moore
*Vice President, U.S. Green Building Council*

**Richard A. Bendis**

Rich Bendis spoke on the importance of venture capital for start-up firms and Innovation Philadelphia's efforts to address a shortage in the region.

*Early stage capital for entrepreneurs is more of a problem today than ever. To address this need, Innovation Philadelphia (IP) formed a direct equity economic stimulus fund. This fund is used as a catalyst to stimulate co-investment with other strategic partners and funding sources. Over $20 billion in funding is available from the federal government in the form of SBIR funds and over $50 billion in other federal R&D programs. These funding awards provide recognition, verification and visibility. Further, they can be used as a potential leveraging tool to attract venture capital or other types of funding. Small business concerns are recognized as a unique national resource of technological innovation. Federal funding encourages partnerships with large corporations and academia, and provides funding for high-risk projects while creating jobs and generating tax revenues.*

*The funding gap for small start-ups is widening, and there is a tremendous gap between $1 million and $2 million in funding start-ups. There is little early stage funding coming in from traditional sources, so the region needs angel investors. To address this need, IP helped create the Mid-Atlantic Angel Group (MAG) fund, which closed in January 2005 with $3.375 million and 70 investors. MAG leverages public and private funding resources and networks by providing equity capital to seed and early-stage, technology-based high-growth companies. The fund plans to invest in 2-4 companies per year and 10-12 companies in all. Average investments will be $200,000 or more, in rounds ranging from $500,000 to $4 million.*

*Pennsylvania did not have a Small Business Innovation Research (SBIR) program until Innovation Philadelphia created the Research Dollars Fund. The Research Dollars Fund connects entrepreneurs to federal grant money, by providing financial grants and technical assistance, as well as research support to early-stage technology companies. This fund is an electronic proposal system with 250 reviewers around the U.S. Federal grant programs such as SBIR, Small Business Technology Transfer (STTR) and Advanced Technology Program (ATP), are the focus of this web-based program. Proposals that go through this system get a 33% hit rate for*

"Entrepreneurial activity has become a key driver in the economic growth and vitality of the state — hundreds of new, good jobs have been created by new companies that did not exist 5 years ago." –Ernie Dianastasis

*SBIRs, which is about double the national average. The awards are about 60% life sciences, as NIH is the biggest funder of SBIRs.*

*Once ideas become reality, the next step is creating revenue. This is the process of commercialization –moving a technology or innovative concept from the idea stage to the marketplace. Another of IP's programs is the Mid-Atlantic Commercialization Corporation (MACC). MACC provides commercialization services to emerging and research-based technology companies, including managerial services to help the entrepreneur quickly and successfully move from product development to successful market launch. MACC seeks to establish hands-on working partnerships in relationships with its clients. It is important not to leave universities out of the commercialization cycle; university research is often low-hanging fruit. Ninety percent of research occurs in industry, but often techniques are "orphaned" as the market opportunities are perceived to be to small to exploit for mother firm. However, dormant intellectual property can be extracted from larger firms and new businesses built around it. Connectivity is key; encourage people to work together. A regional economy is a network of linked organizations and individuals. Connectivity has the ability to transform economic, political, and social relationships on a global scale.*

**Robert W. Coy, Jr.**

Bob Coy discussed the creation of an angel network in St. Louis, Missouri and its efforts to finance innovation emerging from multiple sectors.

*The St. Louis Arch Angel Network was established in January 2005 as an independent, not-for-profit corporation. The St. Louis Regional Chamber and Growth Association and the Nidus Center for Scientific Enterprise, a biotechnology business incubator, organized the Network. A Board of Directors that includes a Chairman, President, Treasurer, and Secretary governs it. The Network is an important addition to the region's capacity to finance innovation emerging from universities and research institutes, companies, and technology incubators.*

*The mission of the Arch Angel Network is to provide opportunities for members to obtain outstanding financial returns by investing in high-growth potential, early-stage companies in the St. Louis region and helping them to achieve market leadership. While the Network does not restrict its investments to specific industries, the majority of opportunities to date are in life sciences and information technology. As of August 2005, the Network has 40 members who are business leaders from the St. Louis region. The goal is to grow the Network to at least 50 members. There is a one-time initiation fee of $1,000; annual membership dues are $2,500.*

*Members do not invest in a pooled fund, but rather commit to directly invest a minimum of $50,000 a year in a start-up firm that has partnered with other members of the Network. Members generally invest under the same terms and conditions. Collectively, they provide seed and early-stage capital in the range of $250K-$1M per investment, an investment range not generally served by venture capitalists. Network members also mentor and coach, serve on boards of directors, provide contacts, and assist with team building, strategic planning, and fundraising.*

*Companies seeking investment capital from the Arch Angels must submit their business plans electronically through the Arch Angel's website. Business plans are reviewed monthly by a prescreening committee, which selects up to four businesses per month to make presentations to the screening committee. The screening committee then selects two firms per month to present to the entire network at a monthly dinner meeting. Members who are interested in investing in a company work together in teams to conduct due diligence and prepare and negotiate term sheets. The network expected to close deals with three companies by the beginning of September, 2005.*

**Ernest Dianastasis**

Ernie Dianastasis recounted his experiences fostering an entrepreneurial environment in the Wilmington, Delaware region along with its positive outcomes.

*The Council on Competitiveness conducted a regional assessment of the Wilmington, Delaware region in late 2003. This assessment discovered the region had several things going for it: a patent per worker level 3.5 times the national average; regional productivity and net firm creation exceeding the national average; and unemployment lower than the national average. Working against the region were: relatively few jobs in high-*

"The Research Dollars Fund offers every applicant a no-cost opportunity to receive valuable feedback on his or her planned proposal concepts from professional reviewers."—Rich Bendis

*growth firms; middle-of-the-pack venture capital; and a poor environment for entrepreneurs. The Delaware Entrepreneurial Action Group (EAG) was formed in 2004 to address the goal set for us by the Council, to foster an entrepreneurial environment.*

*The EAG consists of 23 representatives selected across private, public, academic and quasi-public/private sectors. The group includes city and state government officials, universities, a biotech park CEO, successful entrepreneurs, venture capitalists and a patent attorney. The first task of the group was to further identify the region's strengths and weaknesses.*

*Strengths included: easy access to public sector, business-friendly state, agility due to size, developing riverfront, access to colleges and universities, quality of life, experienced base of talent, and a medical, biotechnology, chemical base.*

*Weaknesses included: reliance on large corporate base; weak entrepreneurial structure; poor entrepreneurial network; weak branding; regional boundaries; and a lack of strong links between startups and education.*

*EAG's assessment showed that:*

- *A 10% boost in Delaware GDP came from new and emerging businesses;*
- *A network of angel funds focused on Delaware opportunities is providing seed capital to emerging businesses, and that the state had become a magnet for venture capital;*
- *The Wilmington area is known as a great place with a bright future and rich culture — a great place to work and live that attracts talented individuals, including college graduates;*
- *Over the last 5 years Delaware has built a private, public, and academic partnership that provides a strong infrastructure to support continued entrepreneurial activity; and*
- *As a result, Delaware has developed a strong "economic balance" (large corporations/small entrepreneurships) that ensures consistent and steady growth into the 21st century.*

*EAG's action plan consists of three components:*

- *Strategy – Public/Private Partnership*
- *Establish a vehicle, information source, branding, selling, funding, networking*
- *Tactics – Region within a region*
- *Exploit strengths, focus on weaknesses*
- *Leverage Innovation Philadelphia and Select Greater Philadelphia (where appropriate)*
- *Execution*
- *Responsibilities, target dates, metrics, oversight*

**Michelle Moore**

Michelle Moore described how the green building industry is an example of an innovative sector with wide-reaching economic development effects.

*The perception of green building is that one builds a hut in the middle of nowhere, and that hut is more expensive to build than a regular building. This perception is incorrect. The Bank of America tower in New York City will be one of the most advanced, high-performance buildings and one of the hottest properties in New York because of the quality of its human environment.*

*Green building is an integrated approach to design. It involves thinking about how the building impacts its environment. These days, the average person spends 90% of their time indoors; why shouldn't we create better places that are healthier, less costly to operate, and less taxing on resources? Green buildings provide a 20-50% energy savings, reduce liability, and enhance productivity due to increased morale and reduced absenteeism. Green schools have resulted in 20% better test performance for students.*

*The LEED system — Leadership in Energy and Environmental Design — is a voluntary rating system that certifies the design and construction of*

*green buildings and has been adopted around the United States. The system covers such aspects of building design as: site planning, water and energy management, material use, indoor environmental quality, and innovation and design process. A case study is the Brewery Blocks in Portland, Oregon, where green buildings are used for economic development. Eighty-five percent of the complex was leased within one year, and it experienced a 24% energy performance improvement with an anticipated annual savings of $58,700 per year, as well as a 25% reduction in water use, following the renovation. Another green building, in Pittsburgh, Pennsylvania, improved employee retention by 50% and received tax breaks from the city.*

*Several other cities around the nation are currently pursuing green building opportunities. Green building is the vanguard of larger, environmentally focused economic development strategies, which include renewable energy development, and green building looks to support new products that reflect market desire for environmentally friendly products.*

"Green schools have resulted in 20% better test performances. Green hospitals have resulted in patients being discharged 2 days earlier." –Michelle Moore

# LEVERAGING REGIONAL KNOWLEDGE ASSETS: BUSINESS–UNIVERSITY–COMMUNITY LINKAGES

"The federal government spends $100 billion annually on research and development, 30% of which is spent in national laboratories." –Phil Singerman

**Moderator**

C. Michael Cassidy
*President, Georgia Research Alliance*

**Panelists**

Jeffrey A. Finkle
*President, International Economic Development Council*

R. Sean Randolph
*President, Bay Area Economic Forum*

Phillip A. Singerman
*Executive Director, Maryland Technology Development Corporation*

Michael E. Skaggs
*President, Next Generation Economy, Inc.*

**Jeffrey A. Finkle**

Jeff Finkle outlined characteristics shared by best-in-class partnerships and showcased examples of successful regionally focused economic development initiatives.

*Several characteristics are shared by best-in-class partnerships. Some of these are national and international recognition, demonstrated leadership, a strong sense of pioneership and university leadership. Three examples of successful regional economic development efforts are San Diego, CA (a military town grown up), Athens, OH (an Appalachian region on the brink), and Georgia Tech (revenging Sherman's march).*

*In the 1970s, San Diego was an old, worn down military town. UCSD Connect, a great model of technology-led economic development was started in 1985 and has assisted over 800 companies. Athens, Ohio is an example of a rural county that is thriving. Their university merged political science and business programs to help with technical assistance and has the first new markets venture capital fund in the country. Athens also has a small business economic development center and the Voinovich Center, a regional enterprise center. Georgia Tech has strong programs in economic development education, business assistance and entrepreneurial development. All three of these examples used tools that are now under pressure: the Manufacturing Extension Program (MEP), the Community Development Block Grant (CDBG), the Economic Development Administration (EDA) and the Advanced Technology Program (ATP).*

**Phillip A. Singerman**

Phil Singerman discussed the fact that federal laboratories are one of Maryland's competitive advantages and the improvements needed to facilitate better technology transfer out of the laboratories and into the commercialization process.

*The Maryland Technology Development Corporation (TEDCO) provides seed funding for university technology transfer and capital and operating support for incubators. They are the most active seed funder in the nation. Connecting with federal research labs is critical in the Maryland region. The federal government spends $100 billion annually on research and development, 30% of which is spent in national laboratories. Of the*

"Offshoring is not new. In 2004, 94% of Bay Area semiconductor and software companies were using offshore resources."—Sean Randolph

*$30 billion spent annually, 20.25% is in Maryland. The national labs are Maryland's competitive advantage, however they are underperforming in technology transfer. TEDCO organizes technology showcases for the labs in an effort to increase tech transfer.*

*A lesson TEDCO has learned is that federal agencies are mission-orientated; they do less basic research and tech transfer is not a priority. The decentralized autonomous nature of these agencies leads to bureaucratic parochialism. Everyone has their own processes and procedures. They each claim uniqueness and essentialness to maintain funding and require distinct operational procedures. The culture inhibits tech transfer and commercialization; failure is an indictable offence and Congress punishes labs that are too successful.*

*Pouring more money into the process is not the answer. In fact there may be too much money now to be effectively deployed and efficiently managed. Instead, there needs to be a market mechanism for transparency and information. Since 1986 labs have been required to report on tech transfer activities but crucial data is still not available. Labs ignore provisions that require them to favor small businesses. More information is needed, such as number of discouraged applicants, time to closure on cooperative research and development agreements, consistent plain language descriptions of available technologies, as well as terms and conditions of licenses. The Council on Competitiveness should work with PCAST and the Office of Management and Budget to get oversight hearings on the existing small business preferences in Stevenson-Wylder Legislation. Appropriations are not necessary, just leadership and focus.*

**R. Sean Randolph**

Sean Randolph shared the Bay Area's economic concerns, as well as key worldwide trends that affect all regions, and what his organization is doing to remain competitive.

*Offshoring is not new; it is actually a rather well established practice. In 2004, 94% of Bay Area semiconductor and software companies were using offshore resources. In 2003, 66% of U.S. companies were using offshore resources. How does a region bounce back after shedding so many jobs? The Bay Area has the assets; it just needs to leverage them. The region consists of 101 cities and 9 counties that don't often work together. Five key trends today are shaping the world. Globalization has added 3 billion new people to the global market. Technology-driven production allows us to do more with fewer people. There has been a shift from manufacturing to services, even in China. Business disintermediation breaks the value chain into segments. Demographics have changed as populations age. These trends lead to fundamental shifts in the global business climate; increasing competition and access for workers, job mobility, and acceleration of offshoring, encouraging high productivity growth and opening new markets.*

*What is the Bay Area good at? Our strengths are in entrepreneurship and new business creation, research in advanced technologies, concept and market development, cross-disciplinary research and global integrated management. Because it is a high cost area, the Bay Area cannot compete as well in lower value-added areas such as mass production or back office operations. In the field of manufacturing, work is underway at the Bay Area Economic Forum on advanced manufacturing (what policies at the state level affect costs), workforce training (leveraging the specific needs of industry with community colleges), as well as lean manufacturing (which can increase productivity in the private sector). California's Blue Ribbon Task Force on Nanotechnology and Northern California's Bay Area Science and Innovation Consortium (BASIC) are two significant programs that focus on science and innovation. The bottom line behind all these efforts and programs is to focus on regional strengths and bring together strong public/private partnerships to support shared objectives.*

**Michael E. Skaggs**

Mike Skaggs reflected on Central New Mexico's efforts to map its entrpreneurial resources and to connect them to local entrepreneurs.

*The goal of Next Generation Economy (NextGen) is to create a higher standard of living in New Mexico by nurturing an entrepreneurial environment powered by human creativity. Originally, New Mexico dedicated 80% of its resources to recruiting new companies to the state. We discovered that we lead the nation in both business starts and business failures per capita, with most businesses failing in years 2 through 4. Breaking down our entrepreneurial infrastructure into four areas, we identified our strengths, weaknesses, opportunities and threats. The strengths: innovative technology in processes and applications, a cost effective talent pool,*

*and a lot of intellectual property in both technology and art. The weaknesses: fragmented entrepreneurial resources, a stove-piped entrepreneurial network and limited technology commercialization experience. Opportunities are in niche applications in highly innovative technologies as well as art, a culture of innovation and support, as well as a desire to live in New Mexico. Threats to future growth are in the form of dependence on government contracts, competition from other innovative regions, and a weak educational system.*

*In an effort to strengthen the region's weaknesses, NextGen set out to map resources, such as sources of capital, professional and non-profit services, and to create a more robust on line network for entrepreneurs to access services and resources. The project is fashioned after the San Diego Connect Project, which was featured at the regional summit put on by the Council during the Central New Mexico Regional Competitiveness Initiative. The network's goals are to improve contact across service providers, create forums for the accumulation and exchange of knowledge, and to link competencies and expertise across professional boundaries. In addition, a new program that has been developed due to the NextGen/ Council dialogue with entrepreneurs, and is an outreach to connect local entrepreneurs in tech and art with global markets.*

"The mapping process helped us do two things: 1) recognize resources we didn't see before and connect them to entrepreneurs, and 2) fill in service gaps by documenting these voids as opportunities for service providers to fill." –Mike Skaggs

# LUNCHEON KEYNOTE

**The Honorable David A. Sampson**, *Deputy Secretary of Commerce for Economic Development, U.S. Department of Commerce*

Dr. Sampson discussed the Strengthening America's Communities Initiative and what it means for communities and economic development in regions throughout the United States, as well as the overall importance of remaining competitive in a world-wide economy.

*As we meet today, I am pleased to say that the American economy is strong and getting stronger. Over 3 million jobs have been created since May 2003; that's 22 consecutive months of job gains. 110,000 jobs were created in March. Our national unemployment rate is 5.2 percent. At 5.2 percent, the unemployment rate is well below the average of the 1970s, 1980s and 1990s.*

*The President and the Administration recognize that this economic growth has not reached all parts of our country. There are areas experiencing high levels of unemployment and poverty that deserve —that need — development assistance, and the President is committed to providing that assistance.*

*We also believe that while the federal government has a significant role in supporting community and economic development initiatives, there is no reason why the federal delivery system of these important resources should be disjointed, duplicative, and overly complex. There has got to be a better way — and that's why we believe that the President's Strengthening America's Communities Initiative is critical to the economic health and well-being of those communities that need assistance the most.*

*The President's Strengthening America's Communities Initiative would take 18 of the 35 federal community and economic development programs — principally the direct grant programs — and consolidate their funding into a single, new grant program called Strengthening America's Communities.*

*The goal of this consolidation is to greatly ease access to the federal system. For distressed communities with limited resources and expertise, the President's plan reduces the number of federal bureaucracies they need to deal with from 18 to one. I think that's important. The federal government should not require communities already short on resources to devote a large proportion of those resources to negotiate a maze of federal bureaucracies.*

*The President and this Administration are committed to targeting federal assistance toward those areas most in need. Clearly, the challenge of substantially reducing poverty and helping communities transition to 21st-century economies cannot be taken lightly. Those communities that face the biggest challenges should receive the most assistance from the federal government. But we as the government can't do it alone. Yes, the government is an important part of equation, but not the only part.*

*The challenge in building growing, vibrant economies is that reliance on government and philanthropic resources to get the job done is an inadequate approach. The real opportunity is to engage the much larger resources of the private sector to change economic opportunities for our most distressed communities and citizens.*

*The fundamental issues and opportunities in distressed communities demand a strategy that optimizes innovation, competitiveness, and private sector engagement.*

*The communities that have made the most progress over the past decade have had leaders who made a priority of removing barriers to economic growth and attracting new private sector investment that creates jobs and produces new tax revenue. They have promoted a culture of enterprise to foster innovation, new business formation, and attract new investment, bringing once-abandoned property back into productive use as employment centers and revenue generators.*

*The next generation of community and economic development and revitalization must embrace the lessons learned from communities and regions that are succeeding. That is what the Strengthening America's Communities Initiative does.*

### Competitiveness in the 21st Century

*The growing consensus among economic development researchers and policy analysts is that competitiveness and innovation drive economic growth in the 21st century.*

*Why do we need to rethink mid-20th-century economic growth strategies?*

*The emergence of a worldwide economy is transforming the economic landscape. Intensified global competition is forcing U.S. businesses to find ways to reduce costs while continuing to produce high-quality products and services.*

*These challenges are significant, tempting many to favor a retreat from participation in a worldwide economy. But economic retreat within the borders of the United States would put our nation at risk. We would miss the enormous economic opportunities offered by active engagement with the other 95% of the world's population. Instead of retreating, we must find new sources of competitive advantage by reshaping our strategies for economic growth.*

*Secondly, we need to rethink the spatial context of economic development. The geography of the 21st century economy and the geography of our political boundaries are fundamentally misaligned. Economic development policy is mostly the province of state and local governments, which pursue goals focused entirely within jurisdictional lines. But the regions of the 21st-century economy do not respect these political boundaries. In fact, regions that share common ground in the new economy invariably spill across the borders of cities, counties, and sometimes states.*

*In discussing the spatial context of 21st-century economic development, we need to wrestle with the reality that the innovative capacity to respond regionally to global challenges is not evenly distributed. Further, clear ground rules for defining regions have yet to emerge. But certainly regions are more expansive than the administrative boundaries laid down a century ago.*

*Third, drivers of economic growth in the 21st century center on the vigorous pursuit of a competitive edge in a global market. The critical path for success will be in seeking "regional competitive advantage," which requires the identification of:*

- *Regional assets of physical, scientific and intellectual infrastructure;*
- *Market opportunities; and*
- *A strategy for exploiting those market opportunities.*

"The goal of Federal economic and community development programs is to create the conditions for economic growth, robust job opportunities, and livable communities, thereby encouraging improvement and reduction of a community's need to rely on perpetual Federal assistance." –Deputy Secretary David A. Sampson

"America must rework its federal support system to keep communities in tune with a changing world-wide economy." –Deputy Secretary David A. Sampson

"We want more resources to flow to the most distressed communities, so the challenge is to target and focus government resources to attract and leverage the power of private markets to renew communities." –Deputy Secretary David A. Sampson

*The development of regional competitive advantage is driven by the private sector, but the public sector does play a major role in a successful strategy. Regions will require:*

- *Effective governance by key players in higher education, government, business, and non-profits.*
- *Innovative capacity that looks beyond the "economy that is" to the "economy that can be."*
- *Development of a world-class entrepreneurial climate.*

*The fourth and final pillar for 21st-century competitiveness and economic development strategies involves enlightened and aligned public policy that creates an environment that helps regions develop regional competitive advantages. This involves three, key ingredients:*

- *Developing "soft infrastructure" or knowledge. If knowledge drives the 21st-century economy, we have a lot of thinking to do. For example, how do we integrate higher education and primary education into our policies for economic growth?*
- *Growing leadership capacity and developing "social capital" to inspire and drive transformation into a new economy;*
- *Re-ordering priorities in economic development strategies to focus on a new "pyramid of economic development" that involves governance, innovation, and entrepreneurship.*

*This Administration is grateful for the Council on Competitiveness' leadership in addressing the challenges and opportunities facing the American economy in the 21st century. We appreciate your work in key regions throughout the country over the past two years leading to today's event, and we look forward to the insights that emerge from today's deliberations, especially as they lead to initiatives to build regional competitive advantage across our nation.*

# CULTIVATING THE NEXT GENERATION OF INNOVATORS: BUILDING AND RETAINING TALENT

"Enroll, Engage, Employ. Plug the regional brain drain." –Monica Turoczy

"America's high school graduation rate is among the lowest in the industrialized world. The United States ranks 16 out of 20 countries." –Barbara Bolin

**Moderator**

**Dan Berglund**
*President, State Science and Technology Institute*

**Panelists**

**Barbara Bolin**
*Special Advisor for Workforce Development to Governor Mark Warner, Commonwealth of Virginia*

**Stuart Rosenfeld**
*President, Regional Technology Strategies*

**Phillip A. Singerman**
*Executive Director, Maryland Technology Development Corporation*

**Monica Turoczy**
*Director, College 360 Initiative, Northeast Ohio Council on Higher Education*

**Stuart Rosenfeld**

Stuart Rosenfeld discussed the importance of community colleges and art programs in an increasingly competitive global economy.

*There are many ways of thinking about the talent required to grow a competitive economy. Today I would like to focus on a group that I believe is often overlooked: the mid-skill labor force. This group is critical to supporting firm innovation and creativity. This local, mid- to high-skilled talent pool is largely grown in community colleges, institutions that are an often-underappreciated asset when it comes to innovation. In order to create and maintain a globally competitive economy, we need to focus on more ways to utilize our community colleges.*

*One way to use the advantages of a community college system is to engage its resources in efforts by firms to improve existing product lines. Focusing on high quality and creative design can increase competitiveness in some sectors. The U.S. has not been pursuing, as intensely as other countries have, products that sell based not just on quality but also on innovative, stylish designs and highly customized products. Artistic talents, I believe, have been undervalued by U.S. industry, and thus I would encourage and push for greater emphasis on arts in technical programs. Students in technology programs ought to be encouraged, or even required, to enroll in design courses. Appearance and aesthetics, as well as quality, are important to consumers.*

*It will take a visionary educational system to recognize the importance of arts in education because arts programs, unfortunately, are being cut back in schools across the U.S. right now. To better compete, we ought to be nourishing creative, right brain thinking and encouraging students to develop their artistic skills and appreciation, especially in the critically important community college systems. The relationship of the arts to innovation is evident in high-tech regions and within many successful companies. Fifty-percent of the professionals in Silicon Valley, for example, consider themselves to have a secondary occupation as an artist, poet, or musician. Kohler, one of the worlds' leading and most innovative fixtures companies, maintains artists in residence. Munro Shoes in Arkansas still manufacturers shoes in the U.S. by concentrating on high end, artistic designs. The community colleges are the key to moving creativity into the mainstream of U.S. manufacturing.*

**Barbara Bolin**

Barbara Bolin discussed the importance of measuring workforce trainability, rather than existing education levels and skill set.

*Our educational system is designed for a world different that the one in which we currently live, and we cannot afford to "lose" any more generations of youngsters. America's high school graduation rate is among the lowest in the industrialized world. One of every four students who enroll in a four-year or community college fails to return after the first year.*

*Governor Mark Warner's Education for a Lifetime plan includes workforce development, and develops a portable skills credential. There is a myth in workforce development that a publicly-funded system is required to turn out trained employees for the private sector. Actually, the private sector likes to do its own training. What the private sector wants is a trainable person. We don't know what the jobs of the future are going to be, so we need to plan for the unknown and prepare with workforce literacy skills. We should measure the ability to learn versus attained education levels and utilize that credential.*

*In Virginia, we have created a career readiness certificate which measures four "R's" – Reading, wRiting, aRithmetic, and Readiness. Readiness is defined as being prepared for further education, entry-level work, or a career. Candidates are measured using the Work Keys System created by American College Testing Service (ACT). The results come in three levels: bronze, silver, and gold. Virginia started working with seven states to adopt the program, and now close to 30 want to be in the consortium. Five states are already issuing Career Readiness Certificates. This initiative has the opportunity to create a new, national credential and database of certified employees nationwide.*

*The Virginia Skills Bank is already in place. Every single Work Keys result is saved in this database. The information is searchable by zip code, school district, etc. If an employer is considering moving his or her company to Virginia, this database provides a sense of the trainability of people in that region. Potential employees will have the option of putting their contact information into the database for direct contact from industry hiring managers. This could eventually become a national skills bank.*

**Monica Turoczy**

Monica Turoczy gave an overview of Northeast Ohio's efforts to attract and retain young people through the College 360 Initiative.

*Higher education is the engine of a knowledge-based economy; 85% of jobs created in the next ten years will require a bachelors degree or higher. In Northeastern Ohio (NEO), only 25% of the population has a bachelor's degree. In U.S. cities, B.A. attainment is the main contributor to economic growth. For each 2% growth in the proportion of college graduates, income growth increases about 1%. In Northeast Ohio, my organization, NOCHE, has worked to identify leaks in the college education pipeline: those who don't go on to college; those who go outside of NEO; those who start but do not finish; and those who leave NEO after college.*

"We need to tap into the collective experience, creativity, and wisdom of networks of community and technical colleges to improve their abilities to stimulate regional development and expand individual opportunity." –Stuart Rosenfeld

"In 2004, Canadian research found that, if you measure actual skills rather than educational qualifications, human capital becomes a strong predictor of economic growth." –Barbara Bolin

*The College 360 initiative works to attract and retain talent. The main goals are to attract greater numbers of students, engage them in the life of the community, and place them in internships or jobs in the region that encourage them to stay. The focus is on graduate retention, but the process starts with attracting students on the front end.*

*Higher education is one of NEO's oldest, largest, and most stable industries – a "regional powerhouse." Twenty-four educational institutions are members of NOCHE. Several other sectors are also committed to connecting with the 18-24 year-old demographic, (i.e. tourism, industry, economic development, etc.). With the support of higher education, industry, and other sectors, College 360 strives to catalyze a critical mass of activity in the region, and create regional alliances to guard against "brain drain." We focus on the three "E's":*

- *Enroll. Encourage as many high-caliber, college prospects as possible to attend colleges and universities in NEO.*
- *Engage. Identify, develop, and promote activities that engage students in the life of the region.*
- *Employ. Link area students with local employers, internships, and jobs to improve graduate retention.*

*The initiative requires not only financial investment, but a philosophical shift that requires the community to show long-term commitment. At its essence, Team NEO is a civic engineering project to reconstruct how the community regards the 18-24 year-old demographic.*

# STRENGTHENING AMERICA'S MANUFACTURING CAPACITY: REGIONAL ADVANCED MANUFACTURING INITIATIVES

"The historical rate of return for technology would justify a 400% increase in R&D budgets." –Richard F. Pearson

**Moderator**

William G. Morin
*Director of Government Relations, Applied Materials*

**Panelists**

Richard B. Jarman
*Director, Technology Partnerships, Eastman Kodak*

Jacques Koppel
*Managing Director, 360vu*

Richard F. Pearson
*President and Chief Executive Officer, National Center for Manufacturing Sciences*

Gary Stanley
*Materials Team Supervisor, Office of Materials and Machinery, U.S. Department of Commerce*

**Richard F. Pearson**

Rich Pearson spoke on the challenges facing U.S. manufacturers and the opportunities for collaboration and investment, as well as the need to dispel manufacturing's current image as dirty and dangerous.

*As never before, the U.S. manufacturing industry is faced with intense global competitive pressures. These pressures are driven by new consumer loyalties that are beyond "brand," i.e., best product, best time, best price, best perception. Capacity and volume are shifting to manufacturers who were unknown just a decade ago. These new pressures demand new responses to maintain critical assets, reduce costs, decrease cycle times, improve quality, increase business responsiveness and improve life cycle sustainability.*

*In the U.S., technology and innovation are the engines of economic growth, transforming the economy and the nature of business competition. So why are there no large increases in corporate R&D spending? In the automotive industry, regulations – not innovation or new product lines – drive R&D. One industry, or one company, is not going to fund a national agenda. Manufacturing is the engine that has traditionally driven the economy. It is the head of a process that had long generated prosperity for Americans. All industries have benefited from advances that first came from manufacturing: flexible/agile processes, lean concepts, just-in-time, six-sigma, sustainability, environmentally benign, road mapping, modular construction, and standardized processes. We need to invest in technology, innovation, and commercialization with the goals of right technology, right application, right time.*

*One of the major challenges facing manufacturers is moving from a mass production system to a flexible manufacturing system that meets changing customers' needs. Meeting this challenge requires quicker response time, which could be achieved by utilizing rapid prototyping, simultaneous engineering, and direct engineering. Also necessary are real-time (and beyond) data systems.*

*A second challenge is dispelling the misperception around the 4D's of manufacturing: Dirty, Dumb, Dangerous, and Disappearing. The ongoing belief that these adjectives correctly describe manufacturing work is a*

"A focus on innovation must begin at the top, with the chief executive officer and senior management." –Jacques Koppel

*major reason why young people are not entering the world of manufacturing. Combating this perception will require increased training, education, and knowledge about manufacturing. The existing workforce can be given a skills evaluation, needs assessments, and in-house training. To capture future workforce, manufacturing needs to be in the university curriculum and a part of K-12 education.*

*In world of limited resources, the decisions of who to partner with and how and when to leverage that relationship are crucial. Manufacturers have the option to partner with suppliers, government, academia, and/or their competitors. Collaboration is the next competitive advantage. Collaboration can be leveraged for risk, resources, and resistance.*

*The U.S. manufacturing industry is at a crucial point in its history. Investment in technology and innovation is critical to moving manufacturing into the 21st century. Increased knowledge of manufacturing and areas of potential collaboration will help support this key industry and ensure continued U.S. competitiveness.*

**Richard B. Jarman**

Rick Jarman outlined the importance of collaboration in research and development between industry, academia, and government, using the example of the Infotonics Technology Center.

*The Infotonics Technology Center is a defining moment for collaborative commercialization of technology. New York State ranks second nationally in numbers of optics and photonics companies but it wasn't until we heard that St. Louis was going to build a national center for photonics that we realized we needed to do something to remain competitive.*

*Infotonics' mission includes establishing R&D through collaborative programs with industry, universities, and government to:*

- *develop and commercialize innovative photonic and microsystems technologies;*
- *provide world-class photonic and microsystems prototyping and pilot-line production facilities and infrastructure;*
- *support high-tech businesses and enhance the environment in which they thrive; and*
- *create and promote educational initiatives encompassing grades K-14 to help prepare a skilled workforce for the future.*

*The corporate culture in upstate New York has bred out the innovation that Eastman and Carlson brought into the region. Both the Kodak and Xerox corporate research labs are shrinking. For years, companies have been trying to commercialize Micro-Electro-Mechanical Systems (MEMS) technology with limited success. Only large semi-conductor companies such as Intel, IBM and Motorola can afford the expensive infrastructure of MEMS; smaller companies like Kodak, Corning, and Xerox are not even in the running. Infotonics and its partners are skipping MEMS and going straight to nanotechnology.*

*Infotonics has received commitments from our corporate and government sponsors that total $300 million over five years, which showcases the importance of collaboration; no company could have raised that amount of capital on its own. We learned to pick our battles and stay regional, to work with local jurisdictions. We also learned the values of collaboration: increased time-to-market, reduced risk, and increased productivity.*

**Jacques Koppel**

Jacques Koppel discussed the importance of incorporating innovation into manufacturing as a tool for competing with lower-wage competitors

*360vu is a non-profit affiliate of the Manufacturing Extension Partnership Program (MEP) at the National Institute for Standards and Technology (NIST). The MEP is 15 years old and serves around 15,000 small- and medium-sized manufacturers annually, providing business and technical services. These manufacturers' typical concerns revolve around reducing costs and improving quality; their main focus is process improvement. However, being 'lean' is not enough to compete in today's global economy – it is time for manufacturers to take it to the next level. Companies need to move to niche markets, specialized products or other growth strategies. A focus on innovation must begin at the top, with the chief executive officer and senior management.*

*To focus on innovation, CEO's need to learn to think in terms of the long*

*term global context rather than short term financial results. A recent study by 360vu showed that only some 10% of manufacturing CEO's used innovation to compete against China, while 70% used a strategy of moving closer to their customer. Changing the culture of manufacturing CEO's from within will be a challenge. CEO's of small firms don't fully understand the nature of the competition. They believe China is just about lower wage rates and are often more interested in complaining about government reform than seeking out new competitive strategies.*

*U.S. manufacturing can be "saved", but it will require new ways of thinking and new strategies that focus on being more innovative than the competition.*

**Gary Stanley**

Gary Stanley described the Department of Commerce's recent efforts to assist U.S. manufacturers competing in the global marketplace.

*The Department of Commerce held twelve roundtable discussions with manufacturers from a range of industries between April and September of 2003. These discussions helped Commerce to identify several key issue areas. These areas include lowering the cost of manufacturing in the U.S., including energy, healthcare and trade barriers. Commerce would like to focus on competitiveness and leveling the international playing field, investing in innovation, as well as creating conditions for broad economic growth while maintaining a highly skilled workforce.*

*On January 16, 2004, Secretary of Commerce Donald Evans released a major report, **Manufacturing in America**, which contained 57 policy recommendations. Eighteen of those recommendations have already been implemented. Prior to these roundtable discussions, nearly all of Commerce's resources went to international markets, and a domestic element was needed. To fill that space, a new Assistant Secretary for Manufacturing and Services role was created. Commerce also created the Manufacturing Council, a government-private sector liaison groups with 13 CEO members.*

"The objective of collaboration is to reduce the time and cost of the technology development process." –Rick Jarman

# APPENDIX

## List of Regional Initiatives and Organizations

| | |
|---|---|
| **Promoting Regionalism** | |
| Team Northeast Ohio (Team NEO) | www.teamneo.org |
| Fund for our Economic Future | www.futurefundneo.org |
| West Michigan Strategic Alliance (WMSA) | www.wm-alliance.org |
| **Building and Retaining Talent** | |
| WorkSource | www.worksourcefl.com |
| Jacksonville Regional Chamber of Commerce | www.myjaxchamber.com |
| Futures, Inc | www.f4k.org, www.thefuturesgroup.com |
| College 360 | www.college360.org |
| **Transitioning to Advanced Manufacturing** | |
| Herman Miller | www.hermanmiller.com |
| Cascade Engineering | www.cascadeng.com |
| Manufacturing Extension Centers | www.mep.nist.gov |
| CAMP | www.camp.org |
| Infotonics Technology Center | www.infotonics.org |
| **Networking Knowledge Assets** | |
| UC-San Diego Connect | www.connect.org |
| ConnectNorthwest | www.connectnw.org |
| Northeast Ohio Council on Higher Education (NOCHE) | www.noche.org |
| Spokane Alliance for Medical Research (SAMR) | www.spokanemedicalresearch.org |
| **Energizing the Entrepreneurial Economy** | |
| St. Louis Regional Chamber and Growth Association (RCGA) | www.stlrcga.org |
| St. Louis Arch Angels | www.stlouisarchangels.com |
| Skandalaris Center for Entreprenurial Studies at Washington University in St. Louis | www.sces.wustl.edu |
| Kauffman Campuses Initiative | www.kauffman.org/campuses |
| Next Generation Economy, Inc | www.nextgenclusters.net |
| State of Delaware | www.delaware.gov, www.state.de.us/dedo/default.shtml |

Council on Competitiveness

**The Council on Competitiveness**

The Council on Competitiveness is a national, bipartisan, non-profit organization that brings together leaders to promote economic growth and raise the standard of living for all Americans. Its membership is comprised exclusively of corporate chief executives, university presidents and labor leaders.

The Council leads the national policy debate on competitiveness issues, including national and regional innovation policy, competitiveness metrics, and human capital development. Through its publications, conferences and technical assistance efforts, it provides direct support to policy makers as well as workforce and economic development professionals. The Council's perspective and findings are widely cited in policy discussions at international, national and state levels. Its members and staff are frequently sought to lead national and regional competitiveness initiatives and to present at major public forums. For more information, please visit www.compete.org

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The Council on Competitiveness is directed by Deborah Wince Smith, President. Debbie Van Opstal, Senior Vice President, oversees all programs and initiatives. Randall Kempner, Vice President for Regional Innovation, directed the Regional Competitiveness Initiative and wrote this summary report. Amanda Welch, Manager, Policy Studies, provided significant contributions to the RII and to this report, including preparation of the summary proceedings of the National Summit on Regional Innovation sessions.

Randall Kempner and Amanda Welch, Council on Competitiveness

*More information on the National Summit on Regional Innovation and on each regional initiative, including presentations and news articles, is available on the Council's website at* ***www.compete.org/nri****.* Measuring Innovation: A Guidebook for Conducting Regional Innovation Assessments *and previous Council reports on regional innovation and clusters are also available.*