

# Economic Development America

COMPETING GLOBALLY ★ GROWING REGIONAL ECONOMIES ★ CREATING JOBS

WINTER 2004

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ECONOMIC DEVELOPMENT INFORMATION COALITION



## Regional Economic Development Forums Coming Up

The Economic Development Information Coalition (EDIC) is holding a series of 20 economic development forums around the country during 2004. The schedule of forums to be held in February includes:

- February 9 - Richland, WA
- February 11 - Medford, OR
- February 13 - Stockton, CA
- February 18 - Laurinburg, NC
- February 20 - Greenville, SC
- February 24 - Ocala, FL

Over 100 economic development practitioners and policy makers are expected to attend each day-long event. The morning component will include presentations about successful approaches to business retention and recruitment, job creation and retention, regional economic growth strategies, and strategic partnerships. The afternoon component will include three breakout training sessions, hosted by representatives from EDA regional offices. Topics will include CEDS, construction and an overview of EDA programs. The forums are free of charge, although registration is required.

The agendas for these and future forums – plus the registration form, information about speakers and the forum meeting facility – are available at the NADO Web site at [www.nado.org/meetings](http://www.nado.org/meetings).

Dates for the remaining 10 forums will be announced soon. For more information about the forums, contact Laurie Thompson at 202/624-5948 or [lthompson@nado.org](mailto:lthompson@nado.org).



## EDIC's Economic Development Today Telecasts: A Chance to Tune In to the Experts

On December 4, 2003, EDIC held the first of its quarterly **Economic Development Today** telecasts. The program focused on the current quarter's theme of university-based partnerships in economic development. Doris McMillon moderated the program, with guests Dr. David Sampson, Assistant Secretary for Economic Development and Mr. William Dean, President, Idea Alliance of North Carolina.

Three case studies featured Linda Clark, Director of the Ohio University Innovation Center; Nisa Miranda, Director of the University Center for Economic Development at the University of Alabama; and Mr. Tim Brennan, Executive Director of the Pioneer Valley Planning Commission in Springfield, Massachusetts.

Each **Economic Development Today** telecast will feature national experts in economic development and case studies from communities around the country. **The next telecast is scheduled for February 4, 2004** and will focus on Regionalism: Maximizing Effective Partnerships for Economic Development in an Era of Scarce Resources.

To participate, you will need to locate a host facility with KU Band or C Band capability and provide the facility management with the satellite coordinates. Most public facilities, as well as many universities and colleges, offer satellite reception capability with viewing rooms. EDIC requests that you please sign up for the telecast.

For more information, please contact Peggy Tadej at (202) 986-1032, extension 224 or via email, [Tadej@narc.org](mailto:Tadej@narc.org). Registration is available on the NARC web site at [www.narc.org](http://www.narc.org).



*Economic Development America* is a production of the Economic Development Information Coalition (EDIC).

To provide information about economic development practices and programs, the Economic Development Administration (EDA) has put together the Economic Development Information Coalition (EDIC). EDIC is comprised of the International Economic Development Council (IEDC), the National Association of Regional Councils (NARC), and the National Association of Development Organizations (NADO). They have joined EDA to disseminate information to economic development practitioners serving distressed communities through a monthly e-mail newsletter; quarterly telecasts; 20 community forums held throughout the country; and a quarterly magazine. For more information, visit the EDIC home page: from EDA's Web site, [www.doc.gov/eda](http://www.doc.gov/eda), click on News & Events, then follow the EDIC link.

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Manuscripts are invited and should be addressed to the editor. The next three issues of *Economic Development America* will focus on the following topics:

- April 2004: Regionalism - Maximizing Effective Partnerships for Economic Development in an Era of Scarce Resources
- July 2004: Economic Development Strategies in a Global Economy
- October 2004: New Directions and Opportunities in Rural Economic Development

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# Our Universities:

## *Accelerators for Economic Growth*

### **D**ear Friend of EDA:

It is an honor to welcome you to the first issue of *Economic Development America*, the Economic Development Information Coalition's (EDIC) quarterly magazine. The EDIC was formed through an Economic Development Administration (EDA) Research and National Technical Assistance (RNTA) grant to provide EDA's key stakeholders across the United States with cutting edge economic development information and news.

Components of the information dissemination effort, in addition to *Economic Development America*, include a monthly e-newsletter, a series of regional economic development forums and nationally broadcast television programs.

This first issue of *Economic Development America* focuses on the important role universities can play in fostering economic development.

At the U.S. Department of Commerce and the Economic Development Administration, we believe that universities have a critical role in securing America's future innovation, economic competitiveness and prosperity in a global economy.

The dominant reality in economic development today is that we live and compete in a global economy. As with so many policy issues, there is significant disagreement over the impact of global competition for American prosperity, yet there is no turning back the clock on the global economy. We must move forward with new ideas and new strategies to maintain U.S. leadership in innovation, competitiveness and economic development.

Global competition accelerates the process of creative destruction, which can be good for innovative and market economies overall, but terribly difficult for displaced communities, industries and individuals. America must never compete in the battle to see who can pay our workers the least and it will take sustained innovation to ensure we don't have to.

Going forward, the quality and intensity of global competition is likely to increase. Foreign nations will continue to make their business climates and infrastructure more attractive to global innovation leaders and they will retain a labor cost advantage. Competing economies around the world are

educating rapidly growing numbers of scientists and technologists, building legions of competent, capable and hungry young innovators eager to compete.

Innovation is a key part of the answer to the economic development challenge for America. Innovation fosters the new ideas, technologies and processes that lead to better jobs and higher wages – and as a result, a higher standard of living.

While national policies set the stage for robust innovation, a key focus of innovative activities is at the regional level, at the interface between companies, workers, universities and government. America has many regions that leverage these resources to foster highly successful firms and strong industry clusters. However, the U.S. is also home to many under-performing communities that have not successfully adapted to the reality of global competition.

So what should universities do to advance regional economic competitiveness and promote innovation?

### **1. Adopt Economic Development as a Core Mission**

Universities must acknowledge that economic development is part of their core mission. At the system or institutional level, there should be a senior officer whose responsibility is to integrate and link the university's broad range of assets to advance economic growth and innovation.

Research universities can be national and world-class in their research, scholarship and educational programs, but also effective at a variety of partnering activities that enhance regional economies and contribute to the growth of technology-based companies. Leadership plays a key role in overcoming the myth that industry and economic development partnerships translate into academic mediocrity.

### **2. Grow, Train, Attract and Retain the Best and Brightest**

Advocating the critical role universities play in the innovation economy in no way denigrates the core mission of academic rigor or excellence in teaching. After all, the primary "product" of a university is embodied in its graduating students.



David A. Sampson  
Assistant Secretary of  
Commerce for Economic  
Development

Within a generation, we will need a far more technically literate, technology-savvy society than we have today – as workers, consumers and teachers. Yet American students at the K-12 level continue to lag behind their international counterparts in math and science learning. At the same time, other nations are graduating far greater numbers of scientists and engineers, further improving their capabilities to handle high-end work. Universities must help us answer the question of “how can we grow, educate, attract and retain the best and brightest scientists and engineering students?” How do we avoid a disconnect between the jobs we want to keep in the U.S. and our workforce’s ability to do them?

A focus on teaching excellence remains fundamental to a university’s contribution to a strong, growing regional economy. Placement of students into jobs can also be conducted in ways that contribute to state economic development through expanded internship and co-op programs and strong partnerships with human resource executives of state-based companies.

### 3. Build Strong Research Partnerships with Industries

Universities that want to lead in economic development must embed “customer friendliness” into their industry research partnership policies and practices. These include:

- Appointing points of contact and coordinating structures by which companies can explore potential research relationships.
- Simplifying research contract language and using novel forms of packaging relationships (e.g. master agreements, strategic partnerships).
- Hiring nationally prominent scientists – with industry and/or entrepreneurial backgrounds – into endowed chairs.
- Developing research parks near campuses to encourage permanent and ongoing relationships between tenant companies and faculty researchers and students.

### 4. Promote Technology Transfer

Herein lies the heart of an innovation economy. Technology transfer will transform existing business processes into world-class operations and create the new products of the future.

Universities will want to:

- Develop policies and procedures that are helpful to would-be faculty entrepreneurs.

- Enable close working relationships and strategic location of technology transfer offices to industry-sponsored research.
- Attract seed money for the further development of research-based innovation.

### 5. Create Entrepreneurial Ecosystems

Universities are the ideal location to connect knowledge creators with knowledge commercializers through technology incubators, entrepreneurial development curricula and nurturing relationships with community-based venture funds.

### 6. Pay Attention to the State and Regional Economic Context

If the “best and brightest” leave home and never return – and if the most promising homegrown technologies get commercialized in another state – then the future of the state’s innovation economy will be stunted. State legislatures are keenly interested in what universities are doing to spur economic development in their states.

America’s research universities are uniquely positioned to play a pivotal role in advancing innovation and building regional competitiveness. The scientific talent pool in this country is second to none, with industry experts, scientists and university researchers all contributing to an unmatched quality and quantity of expertise. Our university system is unequalled, attracting the best and brightest from around the world and remaining a hotbed for generating inventions and training inventors. Universities, communities and industry can create the connections that will bring prosperity in the 21st century.

David A. Sampson

Assistant Secretary of Commerce for Economic Development

#### MARK YOUR CALENDAR

EDA’s 2004 National Conference will be held at the Omni Shoreham Hotel in Washington, DC from June 8-10. Details to follow.

“Universities share a critical role in securing America’s future innovation, economic competitiveness and prosperity in a global economy.”

# Reving Up:

## *Universities and Colleges As Urban Revitalization Engines*

Co-Executive  
Director,  
Initiative for a  
Competitive  
Inner City

**By Anne S. Habiby** Universities and colleges may be this country's greatest untapped urban revitalization engine. Consider the fact that urban university spending on salaries, goods, and services is nine times greater than federal direct spending on urban business and job development each year. Despite the overwhelming size and spending of these enterprises, colleges and universities have largely been off the urban policy radar screen.



Aerial view of the 15.3-acre Springfield Technical Community College Technology Park

More than half of the nation's colleges and universities are located in central cities and their immediate surroundings. Unlike corporations that relocate or are transformed by mergers and acquisitions, these super-sized economic engines are largely immovable enterprises in urban economies.

The resources of universities can be mobilized and directed toward improving the quality of life in surrounding poor communities. At a time when fiscal constraints are forcing communities to identify new and leveraged sources of funding, universities' massive resources cannot be ignored.

Consider:

- In 1996, the latest year for which data are available, 1,900 urban-core universities spent \$136 billion on salaries, goods, and services—nine times more than federal direct spending on urban business and job development in the same year.
- Most of these dollars derive from non-local sources. For example, of every nine dollars that Brown University spends in Rhode Island, only one dollar comes from within the state.
- Urban colleges and universities employ 2 million workers, two-thirds of whom are in administrative and maintenance positions accessible to workers with low skill levels.
- In the 1990s, the Education and Knowledge Creation cluster added more than a half million jobs nationwide, making it the second largest contributor to U.S. job growth. Colleges and universities accounted for 60 percent or 300,000 of these jobs, and employment in this sector is usually less affected by fluctuations in the general economy.
- In 1996, urban-core colleges and universities held more than \$100 billion in land and buildings; they spend billions more each year on capital improvements. However, many universities have endowment funds that have scarcely been considered for local business investments.
- Universities incubate new businesses that seek to capitalize on university research. Close to 19,000 licenses of innovations made at academic institutions were active in 1999. In the same year, with only 25 percent of these licenses generating revenue, they accounted for more than \$40 billion in economic activity and supported 270,000 jobs.

The Initiative for a Competitive Inner City (ICIC) and CEOs for Cities looked across the country for examples of how universities could adapt their core activities to drive local economic activity. Our findings are summarized in a 2002 report entitled “Leveraging Colleges and Universities for Urban Economic Revitalization: An Action Agenda.” Based on these examples, we developed a strategic framework that is built on a university’s six impact levers: its purchasing power, employment capacity, real estate development activities, business incubation potential, business advisory and networking expertise, and workforce development (Figure 1). These activities, with relatively minor adjustments, can be directed to have powerful impact on the surrounding community – and at the same time, enhance the competitive position of the university to attract students, faculty and staff.

Some notable institutions are taking action. For example, during the 1970s and 1980s, urban decay and high crime in the neighborhoods surrounding Trinity College and Columbia University caused a drop in applications. Both Columbia and Trinity initiated significant economic development initiatives – including increasing local spending, increasing purchasing from local vendors and employing more people from the surrounding community – that by the 1990s had helped transform their communities. By the late 1990s, applications to Trinity had increased by 77 percent over a decade earlier, and Columbia became one of the most sought-after Ivy League colleges.

Howard University teamed up with the Washington, D.C. government, Fannie Mae, and corporate partners to transform 45 abandoned, university-owned properties in a neglected, crime-ridden neighborhood into more than 300 housing units and \$65 million in commercial development. More important, not a single one of the housing units remains unoccupied, and owners of 130 adjoining properties are beginning to rebuild.



Figure 1. Strategic Framework

The University of Pennsylvania, through its “Buy West Philadelphia” program, has focused on increasing purchasing from its surrounding inner-city neighborhoods. Penn requires its large national vendors to joint venture with local firms. It also partners with community organizations to identify qualified local vendors and contractors. Annual local spending increased from just over \$1 million in 1986 to \$57 million in 2000.

Unleashing the local economic development capacity of these institutions should be a national priority. It is an agenda that does not require massive new funding or heroic policy – it requires modest but sustained changes to the day-to-day operations of colleges and universities. Elected officials, business organizations and community leaders concerned with economic development should leverage the value of universities by putting these large and stable enterprises at the center of their urban policy efforts. (See *A Call for Action*, next page.) ★★

<sup>1</sup> ICIC is a national, not-for-profit organization founded in 1994 by Harvard Business School Professor Michael E. Porter. ICIC’s mission is to spark new thinking about the business and economic potential of inner cities, thereby creating jobs and wealth for inner-city residents.

<sup>2</sup> Available at [www.icic.org](http://www.icic.org) or [www.ceosforcities.org](http://www.ceosforcities.org)

**“In 1996, urban-core universities spent \$136 billion on salaries, goods and services – nine times more than federal direct spending on urban business and job development in the same year.”**

# ★ ★ ★ A Call for Action

## College and university leaders can:

**1. Create an explicit urban economic development strategy focused on the surrounding community. The strategy should mobilize the multiple ways in which colleges and universities can create economic impact and ultimately advance their own interests.**

In many successful instances of university engagement, the college or university president, with board-of-trustees support, has advanced an economic development strategy to integrate university interests with those of the surrounding community. President Rupp of Columbia University initiated an economic development strategy to channel more university purchasing and contracting to businesses in Upper Manhattan. Through dialogue with the community and including its interests, Columbia University has achieved results unimaginable just a few years ago.

**2. Include meaningful community participation and dialogue in formulating this strategy.**

As many examples illustrate, meaningfully incorporating community input, particularly in university expansion plans, enhances the operational efficiency of the university. Plans get approved faster, avoiding costly political battles with the community.

**3. Charge specific departments and offices with explicit economic development goals.**

The University of Pennsylvania and Columbia University, for instance, incorporated explicit economic development goals for purchasing departments. At Penn, purchasing staff performance evaluation is in part based on meeting local purchasing goals. Meeting these goals often involves embracing a change in practice, such as making purchasing protocol small-business friendly.

**4. Create a high-level coordinator to oversee and advance the effort.**

To ensure continuity and political support, a college or university president should create a coordinator to implement the institution's economic development strategy. This person should be directly accountable to the president. For example, at the University of Illinois at Chicago, its Great Cities community engagement program was initiated and grew rapidly

because there was a special assistant to the chancellor in charge of coordinating the entire program.

**5. Deploy college and university leadership to serve on the boards of business associations, community organizations, and public-sector bodies.**

College and university leaders should seek to serve at the highest levels of local and regional leadership bodies. Virginia Commonwealth University President Eugene Trani served as the chair of the Richmond Regional Chamber of Commerce. This further strengthened the impact of VCU on the local—as well as the regional—economy. The president and high-level executives of the Florida Community College in Jacksonville serve on a number of local and regional business boards, giving them first-hand knowledge of employment trends.

**6. Think long-term.**

Colleges and universities have to contend with two major hurdles when engaging with local communities. First, they often encounter initial resistance and skepticism. Second, while there may be short-term, quick hits that help set relationships on the positive path, most economic development takes a long period to show results. To have meaningful impact, some university leaders interviewed suggested taking a 10-year view.

## Mayors can:

**7. Incorporate colleges and universities in short-term and long-term economic development strategies of their cities.**

Colleges and universities are often missing from a local government's inner-city economic growth strategy. Mayors should incorporate college and university leadership to advise on future direction and bring to bear their considerable purchasing, employment, real estate development, business incubation, advising, and workforce development resources.

**8. Convene college and university presidents and business leaders regularly to identify and further economic development partnerships and opportunities.**

Our research showed that regular interaction between mayors and college and

university presidents is the exception, rather than the rule. Regular interactions among public, private, and academic leaders accompany greater success in forging partnerships.

**9. Establish a college- or university-liaison office to advance collaboration and economic development.**

Aside from regular, high-level convening, mayoral-university liaison offices can be critical to identifying and acting upon economic development opportunities. For example, Boston's Mayor Menino recently established a Liaison to Schools of Higher Education office to ensure continuous dialogue and collaboration with the city's colleges and universities.

## Community group leaders can:

**10. Seek out "win-win" partnerships with colleges and universities and acknowledge these institutions' economic interests.**

Instead of focusing on charitable contributions, community leaders should look for leveraged and large-scale opportunities where an academic institution can deploy its assets for community economic growth while achieving its own goals. For example, community groups can help create land-use partnerships, identify capable local vendors to meet university purchasing needs, and screen and refer local residents to open positions at universities. This approach to partnership has proved successful for community groups to attract larger amounts of foundation or public-sector funding.

## Business leaders can:

**11. Invest with colleges and universities in real estate development, supplier development, research commercialization, incubators, workforce development, and other economic development partnerships.**

**12. Involve institutions of higher education in business forums, associations, and public/private initiatives.**

*Excerpted from "Leveraging Colleges and Universities for Urban Economic Revitalization: An Action Agenda," by ICIC and CEOs for Cities.*

# Virginia Commonwealth University:

## *A Partner in Richmond's Revitalization*

By **Dr. Eugene P. Trani**

*President, Virginia Commonwealth University*

At Virginia Commonwealth University, we recognize that universities, because of their sheer

size, play a role in the economic development of communities. Universities are purchasers, employers and real estate developers. At VCU, we have taken these roles very seriously.

But what we have also recognized at VCU is that emerging trends linking universities ever more closely to economic development provided an opportunity for us to define the University's role in ways that went beyond its traditional involvements. At VCU, we made a conscious and deliberate decision to adopt a leadership role in economic development in the region. For more than a decade, we have developed strategies for linking our knowledge base to cutting-edge business development in the Richmond area; for promoting business development in a way that could physically restore and revitalize parts of downtown Richmond; and for bringing disparate elements in the community together around a shared vision.

### **Linking VCU to Cutting-Edge Economic Development**

VCU has consciously attempted to link its knowledge base to the promotion of cutting-edge economic development in Richmond. When I became President of VCU, the Richmond region was one of the largest metropolitan areas in the nation that did not have a School of Engineering in its environs. The business community was very concerned about this deficiency, and the 1991 regional strategic plan that was undertaken by the Greater Richmond Chamber of Commerce noted that developing a School of Engineering should be a priority.

Working together in the early 1990s, we were able to create the support for developing a School of Engineering in an economic climate that was, to say the least, very challenging in Virginia. We were able to do so because we developed a

**“At VCU, we made a conscious and deliberate decision to adopt a leadership role in economic development in the region.”**



The Virginia BioTechnology Research Park has eight buildings consisting of 587,000 square feet and more than \$145 million in capital investments.

strong partnership with the business community; obtained real financial support from the local governments in the region (which did not have a strong history of cooperation); and because the planned school became a linchpin in the state government's effort to woo Motorola to locate major facilities in Richmond. Ultimately, Motorola did not develop the presence in Richmond that once seemed imminent, but a joint venture between Motorola and Siemens resulted in what is today a \$2 billion Infineon plant with strong ties to the VCU School of Engineering. This partnership, along with new linkages to the biomedical sciences – a traditional strength of Virginia Commonwealth University – has enabled the VCU School of Engineering to prosper.

Also in the 1990s, VCU was the major player behind the development of the Virginia BioTechnology Research Park. The mission of the Park and its governing authority (a political subdivision of the Commonwealth) is to create new jobs and business in the biotechnology industry for Virginia and to position the state to compete in this industry. Today, the Park has been a clear success – it contains 38 companies, four VCU Institutes, six non-profits and employment for more than 1,400 people.

The contribution that the Virginia BioTechnology Research Park has made to economic development actually transcends the number of people employed, the capital



The Virginia BioTechnology Research Park contains 38 companies, four VCU Institutes, six non-profits and employment for more than 1,400 people.



VCU's School of Engineering was created through partnerships with the business community, local governments and the state of Virginia.

invested and the square footage built out. The Park became an instrument by which VCU could link its world-class health sciences with entrepreneurial innovations. It also became the principal means of bringing high tech business with high paying jobs to downtown Richmond. In fact, the entities in the Park as a group have been the largest generator of high tech jobs in the region in recent years. Moreover, the Park transformed the gateway to the city along I-95/I-64 from a collection of gravel parking lots to an architectural expression of the economic vibrancy to which Richmond aspires.

## Revitalizing Richmond and Promoting Economic Development

In recent years, VCU has contributed significantly to the revitalization of the Broad Street corridor, Richmond's main thoroughfare. City leaders had expressed concern for years about the condition of the corridor. They had also undertaken a number of efforts to revitalize it, with varying degrees of success.

Starting in the 1990s, VCU became integral to these efforts by anchoring revitalization with an \$82 million investment. We built a new recreation and convocation center. We constructed a new location for the Fine Arts programs in our internationally known School of the Arts. We've built the largest sports medicine complex in central Virginia along with a first class bookstore, parking deck and student residences. Our investment on Broad Street has spurred a renaissance of private investment as well. There are two major grocery chains with stores in the area and a big box home repair store, something residents had long sought. And private developers have rehabbed formerly underused and abandoned buildings for more student housing and upscale apartments.

The revitalization of the entire Broad Street area in Richmond continues, but we have had a major win-win so far. VCU has become a more attractive environment for the growing number of students who want to study in a vibrant urban culture. And the city of Richmond is creating a more welcoming and hospitable downtown.

## Bringing the Community Together

The role that universities can play in economic development actually extends beyond the direct contributions that we normally think of. In fact, one of the most important roles that the University has assumed is that of enabler and facilitator – helping to bridge the divisions in the community by bringing together groups and organizations that did not have a good history of working cooperatively.

For more than a decade now, we have continually worked to model and promote cooperative efforts with all elements of the community. We've developed partnerships with the less advantaged areas surrounding the campus to address health, economic, educational, public safety and housing needs. Our faculty across the University are highly sought after by community organizations for their capacity in helping them to develop a vision and strategies for implementing it.

When I was asked to chair the Greater Richmond Chamber of Commerce, I took the request not only as a confirmation of the economic impact the University has on the community but, more importantly, as recognition of the role VCU had played in promoting greater cooperation across all localities in the region. There are more and more people in central Virginia who believe that they have a personal stake in what VCU can do and accomplish.

Any summary of what VCU has undertaken in the economic development area will not describe all the steps in the process and all that we learned along the way, so I will conclude with some of the key lessons we've learned that might be relevant to the efforts that other universities are undertaking.

Universities that wish to expand their role in economic development need to focus on working with – rather than acting upon – their community. The community believes what it sees on a daily basis through the university's actions, not what we say our intentions are. At VCU, we believe that both the University and the community benefit to the extent that we become partners and are not perceived as simply another institution with an agenda.

Universities need to develop a capacity for timely response to community and regional priorities. Universities are not well known for their rapid response capabilities. And while the establishment of vision and strategy are long-term processes, there are times when the university has to be willing to move quickly to take advantage of opportunities and to respond to immediate challenges. Universities need to have the infrastructure that will enable this to happen.

Universities have to recognize that once the engagement with the community on economic development matters begins, the relationship has to remain ongoing if it is to be successful. Formally, it means establishing mechanisms inside the university and official partnerships with the community that continually explore opportunities. Informally, it requires the willingness of the University's leadership team – at the highest levels – to carve enough time out of hectic schedules to network and build the relationships that are imperative to productive and cooperative work.

In sum, I believe that multiple opportunities exist for universities to play an important role in economic development in their communities, from the growth of new businesses to area revitalization efforts to convening community-enriching partnerships. For universities, taking advantage of these opportunities means assuming a long-term commitment and a partnership approach with the community. For VCU and Richmond, the effort has been more than worthwhile. ★★

**“Investment on Broad Street  
has spurred a renaissance of  
private investment as well.”**



Broad Street, Richmond's main thoroughfare, suffered blight such as this unused warehouse before revitalization efforts began.



The Stuart C. Siegel Center is one of the new buildings on Broad Street.

# Majoring in Economic Growth

*At NCSU's Centennial Campus, Academia, Industry and Government Share Hallways and Ideas*

By **Katie Burns, IEDC** It can be a little hard to explain just what the Centennial Campus of North Carolina State University is.

It's more than just a university's satellite campus. Calling it a mixed-use development doesn't go far enough, either. And although Coordinator Bob Geolas sits on the board of the Association of University Research Parks, nobody associated with the campus actually calls Centennial a research park.

But whatever you want to call it, North Carolina officials have decided they like Centennial's concept a lot. The state legislature there passed a law earlier this year allowing North Carolina's other state universities to replicate the model if they choose. Several schools now are contemplating plans to do just that. What's more, universities from around the country – Ohio State, Virginia and Clemson, to name a few – have sent visitors to Centennial to see the model in action.

"Everyone comes to see us at some point, or we go to see them," Geolas said.

Centennial Campus occupies 1,120 acres in Raleigh, immediately adjacent to the main campus of North Carolina State University (NCSU). Another 214 acres have been set aside for a separate Centennial Biomedical Campus, still in the planning stages. Approximately 60 organizations have offices, laboratories or other facilities at Centennial, includ-

ing six federal programs, several nonprofits and scores of knowledge-based businesses. Most of the companies are small- to medium-sized, although a few heavy hitters – Bayer Corp., Eastman Kodak, Ericsson and Red Hat, for example – have presences there as well. Red Hat in fact moved its corporate headquarters to Centennial in 2002 after the company outgrew its facility in nearby Research Triangle Park and Lucent Technologies, which had occupied a 120,000-square-foot building at Centennial, was forced by the technology downturn to give up its 20-year lease. All told, some 1,500 corporate and government employees work on Centennial Campus. Of the companies that have left Centennial, 90 percent have moved elsewhere within North Carolina, according to state university system information.

## Technology transfer as a contact sport

The corporate and governmental "partners," as NCSU administration calls them, share the campus with 85 university schools, departments and programs, 1,200 university faculty, staff and post-doctoral researchers, and 2,050 university students. NCSU policy explicitly requires all partners to work with the university in some way or another, be it hiring students, offering internships, letting university researchers use the company's facilities, licensing university-developed technologies or other options.

The partners have access to NCSU laboratories and equipment on a fee-for-service basis. Because the facilities are staffed and managed by trained university technicians and faculty, this can save a company costs for personnel and maintenance. The partners also are entitled to perks such as university gym memberships; free use of university buses and passes for other local transportation systems; faculty/staff discounts on tickets to university plays, concerts and films; library privileges; access to meeting facilities; and other university-related services.

Perhaps the ultimate perk, as Centennial Campus administrators put it, is "access to smart people." NCSU wants business people to rub elbows and share a cup of coffee with students and faculty as often as possible. As Claude McKinney, the man most credited with developing the Centennial Campus idea back in the 1980s, once explained to a reporter, "technology transfer is a full-body contact sport" at Centennial.



Centennial Campus provides the opportunity for businesses to rub elbows with students and faculty as often as possible.

## Centennial Campus Middle School

One might have expected a science magnet high school on a university campus, but the Wake County public school system and NCSU thought differently. They instead opted for a middle school, because its students would be at an age when they're starting to explore possible careers and learning more about the world around them. And the magnet school's theme is one of discovery and exploration in any discipline, be it science, math, art or social studies.

As the middle school's outreach coordinator Cynthia Privette explained, the school has been placed there in part to collaborate with NCSU's College of Education. Teachers work in teams, coordinating lessons and assignments across subjects and grade levels. University students tutor the middle school kids, and some middle school kids have internships with university or government programs. University professors sometimes offer extra lectures – a recent one, according to Privette, dealt with women in colonial America. Some people from the campus companies have spoken there as well, or served as science fair judges. Whatever the school is doing, parents and their children are interested: Of the 120 to 130 slots available for new magnet students available each year, between 200 and 300 applications come in.

Privette said that a number of issues have had to be ironed out in the beginning – the number of middle school students visiting a campus facility at one time; procedures for requesting a chance to do research, and so on. But it seems to be worth whatever hassles there may be. "This is like sitting on a gold mine," she said.

To further encourage that contact, the campus has been designed as a series of "neighborhoods," based on areas of study. Four of these neighborhoods are already in operation: advanced materials; information communications technology; biosciences and biotechnology; and education. The Centennial Biomedical Campus, which will be anchored by the university's College of Veterinary Science, broke ground on its first new building, a \$35 million, 100,000-square-foot research facility, in fall 2002. Plans call for 1.6 million square feet of space worth more than \$500 million, to be built over 25 years.

On top of all that, the campus is home to the 600-student Centennial Campus Middle School, which hosts a magnet program whose key feature is access to NCSU faculty, staff, facilities and programs. Housing is being privately developed for the campus as well – not student dormitories, but high-end condos and townhouses meant to appeal to business and faculty types. The first such development, consisting of 162 townhouses and 196 loft-style condos, is currently under construction.

The master plan also calls for a hotel and conference center, a golf course, hiking trails, plus some shops and restaurants to serve the Centennial Campus population. Most of the university and business development is clustered on the northern end of the site, closest to the NCSU main campus and the university's transit line.

Lake Raleigh, a 71-acre reservoir built in the early 1900s, sits at the heart of the property. (Hurricane Fran destroyed the dam and drained the lake in 1996, but the dam has since been rebuilt and the lake restored.) At least some of the homes currently under construction will overlook the lake, as will the hotel and conference center when they're completed. The golf course will occupy a large swath of the south side of the tract. All in all, it's planned to leave plenty of green space – enough to have pleased the North Carolina Wildlife Commission, which plans to build its new headquarters at Centennial.

### Growing with the tech boom, weathering the downturn

Centennial was inspired in part by the "technopoles" of Europe, planned villages hosting concentrations of research facilities and knowledge-based businesses, along with housing, schools, parks and more. McKinney (now retired) has said however that none of the models he examined quite matched what he had in mind for Centennial. So he and other NCSU officials created their own model.

It began in the 1980s with a gift of 770 acres, the former home of a mental hospital, adjacent to the NCSU campus. More land was donated later, under two successive governors. By all accounts, the Centennial concept initially met with skepticism; some people in the university feared the new project would drain funds from the main campus's programs. But in 1987, the North Carolina General Assembly passed the Centennial Campus Financial Act, giving the university the right to sell revenue bonds to finance the campus. Other financing comes from leases and other fees, which the university puts in a trust fund.

Over time, opposition to the project faded, and today Centennial is an accepted and valued part of NCSU. After all, as a land grant institution, NCSU has been working with the

private sector since the university's inception – which for many universities hasn't always been true. "When we talk about university-industry partnerships, everybody just gets it," Geolas said.

Indeed, it's no secret that the Raleigh-Durham area has grown into a leading hub of technology business because of Research Triangle Park, less than half an hour away from NCSU. And the premise behind Research Triangle was that businesses would want to hire graduates from, and work with, the three major universities – including NCSU, UNC at Chapel Hill, and Duke – located a relatively short drive from one another.

For the record, Research Triangle Foundation President James Roberson does not view Centennial as a competitor. "We really appeal to two different markets," he explained. Larger corporations remain more likely tenants for the Triangle, where more than half the workers are employed by multinational corporations. Roberson points out, however, that 40 percent of companies in the park employ fewer than 10 people. The key difference as he sees it is that Research Triangle's tenants are more likely to be seeking partnerships with multiple institutions, whereas those at Centennial are collaborating mainly with NCSU. Roberson also noted that when Centennial Campus startups outgrow their space there, they become potential tenants for Research Triangle. "I do think we're complementary," he said.



Bus service connects NCSU's main campus with nearby Centennial Campus.

Centennial's growth was slow but steady at first, until the 1998-99 fiscal year, when it exploded, doubling the number of partners up to that point. Of course, that was shortly before the nation's "tech bust." Geolas says the campus did see a drop in partners, from its peak number

of 80. Most of the departures were failed startups from the NCSU technology incubator or telecoms that simply couldn't survive the downturn. Lucent Technologies, which had made NCSU administrators ecstatic when it announced plans to build its optical networking R&D facility there in 1999, ran into hard times and had to pull out.

But as noted before, Red Hat took over Lucent's building. And smaller companies that had managed to grow in spite of the economy backfilled much of the other unoccupied space. According to Geolas, Centennial has been able to maintain an occupancy rate around 95 percent through it all.

The incubator's situation has been a bit more problematic. Established in 1999, the incubator initially was managed by a non-university entity. That organization, however, ran into political problems a couple of years ago and the state stopped funding it. In June, the NCSU Industrial Extension Service took over management of the incubator, possibly for the long term, though according to Geolas this hasn't been settled yet.

Gene Fornaro, director of business development for the extension service, noted that his organization is hardly new to assisting small companies. He said his organization hopes to increase the level of service to small businesses there and had already instituted business plan reviews and a speaker series. In the meantime, the two-person incubator staff is studying how other university incubators had operated, to see what they could incorporate into their own plans. The incubator currently houses about 24 companies and is a little more than half occupied. About half the companies are NCSU spinouts, often referred by the university's technology transfer office or the College of Management. Most of the others come from the surrounding area, drawn in part by the chance to work with NCSU.

Centennial is heart-and-soul a university effort, unlike many research parks, which may be operated by separate nonprofits to provide more management flexibility and some liability protection for the universities sponsoring them. Though he can see the pragmatic benefits of independence, Geolas also sees clear benefits from its peculiar status as a

university campus that hosts industry. Indeed, Geolas' primary task is to help businesses together with NCSU researchers and programs, and that's what ultimately sells Centennial as a business location. "It's the strength of the programs that makes it work," Geolas said.

### First Centennial, now 'Millennial' campuses

James B. Milliken, senior vice president for university affairs with the University of North Carolina system administration, liked what he saw at Centennial enough to start encouraging similar projects at North Carolina's 15 other state universities. In 1999, North Carolina lawmakers passed legislation allowing the University of North Carolina at Chapel Hill to develop a project that has been dubbed "Carolina North," on a little more than 960 acres roughly a mile and a half from the UNC campus. Since then, six other institutions have begun planning or developing what the state is calling "Millennial Campuses." All are modeled at least in part on Centennial.

Tony Waldrop, vice chancellor for research and graduate studies, said that Carolina North has a 50 to 70-year development plan for its site, though only 25 percent of the land is slated to be built upon. Its targeted areas of expertise will be biotechnology and human genome R&D, and new educational methods. Like Centennial, Carolina North is expected to host research facilities, housing and some retail, though not enough to compete with established Chapel Hill shopping areas.

At full build-out, Carolina North is expected to include 240 acres of developed land containing 8.4 million square feet of offices, facilities and other uses. The draft plan was only unveiled in November, and Waldrop concedes there were some concerns about traffic impacts. But he's confident the details will be ironed out to the satisfaction of most observers. "We're not looking at this as just another land deal," he said.

And over at Western Carolina University near Asheville, Joseph Carter, a former vice chancellor for business affairs, has been asked take a half-step out of retirement in order to shepherd the rural school's Millennial Campus project through the planning phases. He explains that the campus is intended in part to help stem the area's "brain drain."

"This region has had a history of seeing its young people, and especially its better-educated young people, leave to find employment opportunities," Carter said. Two parcels of land have been targeted, totaling 340 acres, although it's so early in the planning process that Carter can't say for certain what will be built on them. He expects some research and retail uses. The university recently brought some nationally known consultants to discuss the possibilities, not just with administrators, but with the public as well, and received "very positive feedback" on the proposals.

All this pleases the folks behind Centennial Campus. "I'm pretty proud of what we've done," Geolas said. He doesn't expect the Millennial projects to replicate Centennial exactly, of course. "There's no one way to do it," he said. But for Raleigh, Centennial seems to have found the right formula.

★★★



A lively pedestrian space with outdoor seating and lined with smaller shops, restaurants and major entertainment venues will extend east from High Street through the center of South Campus Gateway.

# Gateway to a New Neighborhood

## *at Ohio State University*

**By Alex Iams, IEDC** The Ohio State University opened in 1873 with 25 students, two miles north of downtown Columbus on the Neil farm. University Hall, adorned with scarlet bricks nearly matching modern-era school colors, was the first building – a manor house overlooking bucolic grounds.

Patches of the 1800s exist today, but a decidedly urban environment surrounds them, especially east of campus. There lies High Street, Columbus's principle artery. Running north and south, High Street is the seam of this appropriately football-shaped city. The street wears many hats in its 20-plus mile course; neighborhoods, business districts, and nightlife line various sections.

Traveling north from downtown to the university, High Street decays at the campus's doorstep. The Short North, a well-kept arts district between downtown and the university, gives way to vacant, unkempt or decaying properties, and some of the highest crime rates in the city – hardly the way OSU would like to introduce itself.

"It reached a point where we could either turn our backs on it or embrace it," said Jill Morelli, the University Architect.

"We decided to embrace it." Today, thanks to a ten-year effort, the university is preparing its southern portal for a major makeover. Campus Partners for Community and Urban Development, a non-profit entity created by a university task force in 1995, is building a \$120 million project known as South Campus Gateway that will include 250,000 square feet of retail, 90,000 square feet of office space, a 1,200-space parking garage and 190 apartments. The South Campus Gateway is scheduled to open in August 2005 and occupy 7.5 acres on the university's southeast side.

### **A Downward Spiral**

The south campus area bottomed out in the early 1990s, but it had been declining for years. John Simpson, a professor of landscape architecture and Columbus native, has been on

# “There will eventually be a culture change in the area if students,

campus since the 1970s. “Even in 1970, South High was predominated by low-rent bars,” he said. “It was a fairly seedy area – transient and run-down.” Landlords avoided putting money into their properties for several decades, yet the area survived as a student playground, renowned in undergraduate lore for its cheap drinks and good times.

“Alums have countless stories of the good times they had at the south campus bars,” says Eddie Pauline, who came to OSU as a freshman in 1998 and was president of the undergraduate student body from 2001 to 2003. But the good times had a downside. The bars sold liquor to underage students and violated health codes. Crowds were plentiful and often unruly. Police fixed barriers along the narrow, dingy sidewalks to prevent intoxicated patrons from stumbling into traffic. Underage drinking was rampant, several high-profile crimes occurred, and Ohio parents began to think twice about sending their children to Ohio State.



Site plans for South Campus Gateway show Ohio State's campus to the upper left. The upper image shows second floor uses.

## Taking Action

In 1994, OSU's central administration decided to act, forming the University Area Improvement Task Force chaired by University Treasurer James Nichols. The task force began by touring six urban campuses across the country, to apply lessons from similar institutions to its own circumstances.

The task force recognized a pattern of student migration away from the central campus. Nichols estimates that even today, only 20 percent of Ohio State's 50,731 students live in the campus area. “When students don't live nearby they don't participate in activities,” he said. “Research shows that student retention rates and grade point averages are higher among students living closer to campus.”

The task force decided to focus on ways to make the campus area more attractive. From one of its 13 recommendations, Campus Partners was born in 1995, its charge to revitalize the neighborhood near OSU. Though Campus Partners has other initiatives – for example, in housing and code enforcement – South Gateway is its showcase effort.

The partnership opened communication between the university and the City of Columbus that had been limited for years. “Prior to Campus Partners, we didn't meet with the city on planning-related issues. Now we meet regularly,” says architect Morelli. Campus Partners also took special care to include residents, students, faculty, property owners, and community organizations.

Terry Foegler, president of Campus Partners, is proud of its grassroots approach. “The consensus-building process took the first three or four years,” he said. “This is a complex process that takes patience.” Campus Partners representatives regularly came to student government meetings and requested feedback from groups about what they wanted to see happen in the area. South Campus Gateway, one of Campus Partners' first projects, is a product of the public participation process.

## Facing Criticism and Challenges

But sometimes, inviting everyone to participate isn't enough. As a high-profile development project involving the city's major players, South Gateway was subject to both media and public scrutiny. Its sheer size – Campus Partners needed to acquire 31 parcels of land and relocate or buy out 26 businesses – ensured that the process would require patience.

“Any eminent domain activity is not without controversy,” said Foegler. Except for roadway purposes, Ohio law does not provide for quick-take actions, in which a municipality can assume control of a property while (not after) property compensation negotiations occur. Foegler estimates that Campus Partners spent an extra year and a half acquiring property from uncooperative landowners. For the most part, however, property owners embraced the revitalization scheme.

# faculty and staff at OSU care enough to make it happen.”

Meanwhile, the public began to grumble, wondering why plan implementation was taking so long. Actually, the process was proceeding according to schedule, says Simpson, but was taking place in “a fishbowl.” People didn’t have an appropriate concept for how long redevelopment takes because most projects aren’t followed so closely.

Compounding matters, the area looked worse during the site assembly and business relocation phases. The urban streetscape, though gritty, ceased to exist when demolition crews flattened the two- and three-story buildings along High Street. “Folks were originally skeptical about what we were doing,” says Foegler.

And despite extensive outreach to students, some accused Campus Partners of trying to “sanitize” the campus area. Some bought into a popular but perhaps misguided perception that the redevelopment was stealing something from their college experience, based on party lore about the way south campus “used to be.” Pauline suspects that student critics of Campus Partners were either uninformed or apathetic. Leaders sent e-mails to thousands of students, providing updates and inviting them to residence hall forums. Many didn’t care enough to participate.

Those that participated have more balanced, informed views, says Pauline. Jeremy Rowan, an OSU undergrad and grad student in the 1990s, was among them. Rowan remembers the good times along South High, but tempers his memories with reality. “Now that the buildings are gone, people feel somewhat nostalgic. But in reality the bars were out of control and in total disrepair. OSU will be a better place once the Gateway project is complete.”

## Moving Along

Indeed, the project is moving toward completion. Initially, in addition to public outreach, Campus Partners’ role was to acquire and assemble the land, in partnership with an equity developer. Following a public competition, Campus Partners



Barnes & Noble College Bookstores will operate a full-service university bookstore as a retail anchor in the South Campus Gateway.

picked the Boston-based Druker Company in 1999. But Druker and Campus Partners in mid-2002 agreed that the project would better be developed under a fee development agreement, and Druker departed. According to Foegler, OSU’s decision to lease Gateway’s office space and include student-housing stipulations, plus commitments from Barnes & Noble College Bookstores and a State of Ohio parking garage, reduced risk. “It made more sense for us to own the property and accrue the benefits,” he said.

Six months later, Campus Partners retained a fee-based developer, Jones Lang LaSalle. Jones Lang LaSalle is responsible for management of Gateway’s design, construction and leasing, but will not be involved beyond project completion.

Campus Partners tapped a variety of funding sources for Gateway, including \$20 million from the university’s endowment for land acquisition. Most recently, the project received a \$35 million allocation from the Department of Treasury’s

## OSU Funding

Sources	Amount (in Millions)	Uses	Amount (in Millions)
<b>Equity:</b>		<b>Land</b>	<b>\$20.0</b>
OSU Endowment Fund	\$20.0	Public Improvement	\$8.0
OSU Law School	\$2.1	Hard Costs and Contingency	\$60.0
<b>Grants/Public Investment:</b>		Parking Garage	\$16.3
City of Columbus	\$5.7	Tenant Improvements	\$12.0
State of Ohio	\$4.5	Soft Costs	\$36.1
<b>Debt:</b>			
OSU Tax-exempt Bonds	\$67.6		
NMTC Enhanced Debt	\$52.5		
<b>Total: Sources</b>	<b>\$152.4</b>	<b>Total: Uses</b>	<b>\$152.4</b>



This view illustrates the buildings and streetscape along East 11th Avenue looking west toward High Street. The university bookstore to be operated by Barnes & Noble College Bookstores is shown on the left.

New Markets Tax Credit Program, which Campus Partners will use to finance the retail component. The City of Columbus and the State of Ohio also are contributing: the city is spending nearly \$6 million on public improvements and the state will contribute \$4.5 million toward a parking garage.

### What's Next?

Currently, the site remains a blank slate, awaiting surface construction. Public infrastructure work is complete, including overhead utilities and on-street parking arrangements. Bids for the foundation work and additional key components will be settled within six months.

Hopes are high for the finished product. Renderings depict a lively atmosphere and strong urban character. Building facades will line the sidewalk but leave room for outdoor restaurant seating and small green spaces. Passing pedestrians will be able to see what's happening in Gateway establishments through oversized windows. And the project's residential component – which Morelli calls “a real plus” – will supply consistent activity.

Letters to Ohio State's student newspaper, *The Lantern*, express concern that national retailers will predominate Gateway, pricing out students and delivering another blow to an area once known for independent, 'mom and pop' establishments. But the worry is unfounded, says professor Simpson. “They won't price out the students, because for Gateway to be successful it has to tap student spending habits,” he says. Foegler assures that Gateway will include many student-friendly establishments, the majority of which will not be chains.

### Addressing the Problem

Gateway is a small piece of a larger distressed area. University officials hope its presence will help stabilize the neighborhood, but they know that the project alone is not enough.

So, Campus Partners is participating in an effort to improve housing conditions in the area, which has the highest concentration of poverty and Section 8 housing in the city. The plan calls for structural rehabilitation, new and more effective property management, homeownership opportunities, and support services for residents.

Campus Partners also is bringing attention to the area that had been missing for years. Basic services like street sweeping, trash pick-up and code enforcement have returned. And the city worked with OSU and Campus Partners on an overlay plan for the High Street corridor that will set the stage for future development.

### An Attitude Adjustment

As the physical characteristics of east campus improve, attitudes may improve too. Pauline hopes that students respect the neighborhood as they would the university itself. “We organized one hundred students and one hundred faculty members and went door-to-door to talk about the importance of community and respecting the place where you live,” he said. “There will eventually be a culture change in the area if students, faculty and staff at OSU care enough to make it happen.”

Today's students don't rely on the High Street corridor for entertainment. They spend weekends in downtown Columbus, the nearby Lennox shopping center or the sparkling new Arena District. “Right now, High Street is dead,” says former student Pauline. Though the students are gone for now, when Gateway opens in 2005, OSU is banking on their return. ★★★

# SUNY-Plattsburgh & EDA

## Team Up for Upstate New York

By Alex Iams, IEDC

When an icy storm, blustery wind, or rising flood knocks on upstate New

York's door – or even a 5.4 earthquake in 2002 – Jim King answers. King is the director of the Clinton County Emergency Management Office in Plattsburgh. Though King's job is always difficult, it should get easier since he began using the Technical Assistance Center at SUNY-Plattsburgh, an Economic Development Administration University Center.

The Technical Assistance Center (TAC) is providing Geographic Information System (GIS) services to King and his staff through a Federal Emergency Management Agency grant. Clinton County will use GIS to track down useful items more quickly during an emergency, such as bulldozers, heating systems and animal shelters.

The TAC provides technical assistance services to clients in a 16-county region near the university. It is one of only two Economic Development Administration University Centers in the state. University Centers, which the EDA began funding in 1966, offer outreach services to individual businesses or economic development organizations in their regions, with emphasis on economically distressed communities. At SUNY-Plattsburgh, TAC is a department of the School of Business and Economics.

“Our primary goal is to draw on university resources and extend them into the community,” says Howard Lowe, director of economic development at Plattsburgh State and the center's director – and it's keeping them keep busy. “Right now there's far more work out there than we can possibly handle.”

### Connecting Upstate to the World

The Development Corporation, a Plattsburgh-based economic development organization, is one of several entities working with the TAC on a fiber-optic network project for the region. “Companies (looking to locate in the area) used to ask about the availability of water and sewer,” says Adore Kurtz, president of the Development Corporation. “Now they ask about the level of broadband service.”

Without widespread broadband access, Plattsburgh would be confined to mediocrity as a business center, according to Kurtz. And given upstate New York's rural character, Lowe and Kurtz agree that the project isn't viable for a private carrier to construct on its own. So the public entities stepped in.

Industrial development agencies from three counties and the Town of Plattsburgh pooled their resources to conduct a feasibility study. Once completed, they brought the study to



Left to right: Howard Lowe, Director of Economic Development; David Hensarling, Lecturer, Hotel, Restaurant, and Tourism Management Department; Kimberly Peryea, Office Manager, Technical Assistance Center; Aimee Jeleniewski, student assistant, Technical Assistance Center; William Ferguson, Economic Development Specialist, Technical Assistance Center; John Parmelee, Lecturer, Hotel, Restaurant, and Tourism Management Department

TAC. “They had the ability to take this project to another level,” says Kurtz. TAC professionals connected the coalition with resources – the SUNY Research Foundation, for one – to further develop the project, and offered technical expertise. For instance, TAC provided the data and GPS coordinates necessary to design the network's route.

Broadband service providers will tap the open-access, fiber backbone to serve businesses, schools, facilities, and eventually, individual homes across the three counties. “It's the single most important economic development activity in this area,” said Andy Abdallah, Plattsburgh's Town Supervisor. “Rural areas are falling behind because we don't have high-speed capability.”

The project will attract new businesses and help retain existing ones. The region is already home to several large research and manufacturing facilities, including the Wyeth pharmaceutical company, the Trudeau Institute, Georgia-Pacific, and Upstate Biotechnology. It also is expected to support more at-home and small businesses.

### A place to stay

The area economy also relies on the tourism and hospitality industries. Beautiful mountain lakes, fresh air, and historic sites bring vacationers to the area, particularly during the warmer months. The rugged region hosted the 1932 and 1980 Olympic Winter Games. But in most years, cooler seasons don't match summer demand, causing many businesses, particularly restaurants and hotels, to close.

Continued on page 31

# The EDA University Center:

*A Partner in West Virginia's Renaissance*

Vice President  
for Institutional  
Advancement  
and Research  
and Director  
of the EDA  
University  
Center Program  
West Virginia  
University  
Institute of  
Technology

By D. Anne Cavalier, Ed.D.

West Virginia  
University  
Institute of

Technology (Tech) provides leadership in the revival of the state's economy by applying the knowledge and technical resources of its faculty, professional staff, students and alumni for the good of the entire state. Tech's education initiatives go beyond its campus by actively engaging in strategic partnerships and programs to benefit economic development throughout the state. Each initiative furthers Tech's commitment to achieving a "West Virginia Renaissance" of economic vitality, and The EDA University Center grant program has been the catalytic agent fostering this effort.

Tech's Center of Applied Technology and Business Development, established in 2001, brought together various programs that directly benefit new and emerging businesses. These include the EDA University Center, the Small Business Development Center, Work Force Development Office, the Job Development program, and the Applied Technology Incubator. Each segment of the Center has a distinct function that supports a different aspect of business success. The Center "strives to create opportunities for economic growth, for faculty research and development, and to give students work experience while learning." Direct and indirect effects of the Center's work are generating businesses, strategies, and plans that will benefit the people of the state.

Operating under the U.S. Department of Commerce, the EDA University Center provides grants to support research projects and studies that have the potential to create jobs and businesses. The Center's goals include providing data for decision-making, models for business success, business feasibility studies, and technical assistance to increase success in business creation and expansion.

Any county and city government or economic development authority is qualified to apply for a project. Roughly 20-25 studies are conducted each year that use the talent and knowledge of Tech faculty, professional staff and students, from the fields of math, science, engineering, computer science and management (at times partnered with external professionals). In addition, the Center creates real-world learning opportunities for students, offering field experience in faculty and professional staff members' areas of expertise.

Partnerships for research sponsored by EDA University Center grants have led to important gains in West Virginia's economy, in student learning, in faculty development and even in state and national security.

- Tech's chemistry research program with Dow Chemical was funded through EDA with matching equipment and funds from the chemical industry. At one time, the capital city of West Virginia boasted it was "the chemical capital of the world." But the chemical industry's economy is much different today. The highly paid chemical industry workforce in the Greater Kanawha Valley shrank to less than half its peak, and a great deal of excess processing capacity exists at local plants. In partnership with industry leaders and with the newly formed Chemical Alliance Zone, Tech has two major research projects underway utilizing Tech chemists and students.

In one project, faculty members are working to find additional applications for monomers (molecules that can combine with others to form a polymer) to grow related businesses. In another project, faculty from chemistry and accounting are researching the feasibility of moving the production of chemicals important to United States national security back to the US. This production left our country due to greater profitability overseas, and since September 11, 2001, finding ways to produce these chemicals domestically and profitably has become critical. The success of this research could lead to discoveries that would be of additional interest to the chemical industry.



WVU Tech's Center of Applied Technology and Business Development houses multiple programs that benefit new and emerging businesses.

# “Direct and indirect effects of the Center’s work are to generate businesses, strategies, and plans that will benefit the people of the state.”

- A literature review and study of the World Trade Centers-Pentagon civil engineering focused on building code revision recommendations related to structural issues, fire safety, utility service, emergency entrance and egress, ADA compliance, technology integration, environmental issues and more in light of increased threats to our national security. This information was collected and analyzed to create a comprehensive reference resource for government entities, emergency responders and others. The study included recommendations for building code revisions that will reduce the loss of life and property in future emergencies.
- With the goal of fostering more applied technology industries in the Upper Kanawha Valley, Tech was a partner in securing grant funding to construct the first building in the Upper Kanawha Valley Technology Park. The project’s feasibility study, conceptual drawings and engineering studies all were funded by the EDA University Center. In addition, EDA invested another \$1.2 million in the actual construction of the facility. The building will house three applied technology businesses that are expected to create 300 new, full-time jobs in the building after three years. The area economic impact of the Technology Park’s phases is projected to total \$18.7 million annually.
- Tech is planning the National Printing and Publishing Innovation Center, an outgrowth of Tech’s nationally ranked printing management program. The concept will provide students, faculty and industry a place for education, research, and training. Both the feasibility study for the center and the technical assistance needed to redesign an existing campus building were projects funded by the EDA University Center Program. The Center will include computer simulation and hands-on training laboratories for students and industry professionals, an extensive printing and publishing library, and state-of-the-art meeting and conference facilities. Tech will be capable of hosting large corporate training seminars in printing and publishing and extensive hands-on training workshops that are not available elsewhere. The Center is estimated to provide an economic boost of approximately \$90,000 to the area within its first year.

Success never comes without challenges, however. At first, many faculty members were hesitant about getting involved in these studies and projects. Their fields were engineering,

mathematics, computer science, or accounting, not economic development. But as the first few faculty enjoyed the opportunity to participate in funded research *in their fields*, and saw the application of their work leading to economic success, other faculty were motivated to get involved.

At the state and national levels, the slow economic recovery following September 11, 2001 has either delayed or reduced some corporate partnerships and investments in studies and projects. In turn, Tech’s EDA University Center has had to delay the implementation of studies or reduce the budgets of others. Businesses that had already planned to expand have revisited those plans and extended their timelines, thus the implementation of some studies’ results has been delayed.

Tech’s EDA University Center Program is the cornerstone of Tech’s commitment to achieving an economic renaissance for West Virginia, through the creation of new knowledge, products and processes in the fields of engineering, technology and science. Effective leadership and partnerships – such as the chemistry research projects and plans for the National Printing and Publishing Innovation Center – will continue to lead to new jobs and businesses. Beyond these, Tech continues to seek opportunities that will retain the state’s best and brightest, attract businesses in which they can work, and advance economic development for our communities and the great state of West Virginia. ★★

<sup>1</sup> EDA University Center, West Virginia University Institute of Technology, 2001 Annual Report. Dec 2001.

## About West Virginia University Institute of Technology

West Virginia University Institute of Technology (Tech) has been providing high-quality education and community service for over 100 years. For four consecutive years (2000-2004) U.S. News and World Report has ranked Tech’s engineering programs among the top in the nation and this year identified Tech as the fourth best comprehensive college in the south. Tech graduates earn the highest starting salaries of all West Virginia graduates, and the National Association of Colleges and Employers reported that Tech offers 10 of the highest-paying majors in the nation.

# Incubating Technology Businesses at Purdue

By **Alex Iams, IEDC** Sam Florance has an unusual recipe for universities looking to energize business incubation efforts: one used copy machine, a used fax machine, an aging common-use computer, and a dash of clerical assistance.



One of the goals of the Purdue Research Park and its Gateways incubator program is to keep Indiana companies in Indiana.

It worked for Purdue, where second-hand machinery helped the university start a support service program for new technology ventures. In 1993, the Purdue Research Foundation (PRF) – trying to propel new venture incubation – put the appliances in an old building that had been used in the 1960s for NASA research and began calling it the Business & Technology Center.

“What happened next surprised a number of folks,” says Florance, Director of the Gateways Program, as it is now known. “Firms began to come here for the address, the association with Purdue, even a postage meter that read ‘Purdue Research Park.’”

Affiliation with Purdue didn’t guarantee success, unfortunately; many of the firms failed. But the spaces they left behind filled quickly. “It was more than enough for the university administration to conclude there was much potential in an expanded version,” says Florance.

As PRF increased its incubation capacity, it decided to add a support service program to help young companies survive. The program, known as Gateways, nurtures young tech firms by providing access to the financing, networking, and business acumen that start-up companies need to turn research into commercialized applications.

Purdue is distinct, says Florance, because it’s one of the few universities that is actually “getting into the trenches with prospective firms to bring them through a very hazardous time in their early organizational development.”

## Helping Indiana

Gateways is about five years old. The program has assisted at least 40 clients, many of which develop revolutionary products. Sophisticated is an understatement for technologies that regenerate human flesh, monitor known criminals by satellite, and create Braille-friendly tax forms.

In the past, innovations like these might have left the Purdue area or the state of Indiana – as many of the university’s graduates do – taking economic development benefits with them. “Purdue produces more computer science grads than any other school in the United States,” said Dan Cravens, Vice President for Development at *gh*, a tech company in the Purdue Research Park and Gateways’ first graduate. “Most don’t stay.”

Gateways is helping to change that. It helps students and staff license technologies and start their own businesses without having to leave the area. “That’s the goal, to keep Indiana companies in Indiana,” said Ben Pobanz, co-founder of CellTrack, a Gateways-bred company.

## Steering Clients to Success

Asked to describe how Gateways aided his company, Pobanz hardly knew where to begin. “They helped us with everything – A to Z, from developing a business plan to securing the first round of funding,” he said. Gateways also helps clients characterize industry contexts and markets, conceive and refine proposals for capital formation, and understand cash management fundamentals.

Florance and his small staff serve as mentors throughout this process. “Sam doesn’t do our work for us, but he pilots the ship,” said Pobanz. “He focuses light on things we need to be doing.” And the assistance grows with the business, according to David Shelby, Finance Vice President at Griffin Analytical. “As the company has matured, we use the services even more than we did during the initial phase.”

*Incubating Technology Businesses at Purdue*

*Continued on page 31*

# A Historic Armory Gets Wired

*A tradition of innovation continues at Springfield Technical Community College Technology Park*

By Pearl Kaplan, IEDC

Springfield, Massachusetts has long been at the forefront of technological innovation. The Springfield Armory, founded in 1794 as the country's first arsenal, spearheaded the manufacturing of interchangeable rifle parts, an innovation that led to mass production. In 1968, the armory closed, but the tradition of technological advancement lives on at the site.

Soon after the armory shut down, Springfield Technical Community College (STCC) opened its campus on part of the historic site called Armory Square, in 1969. Across from the college, the Federal Square site was used for light manufacturing by Milton Bradley and General Electric, until Digital Equipment Corporation (DEC) acquired it in 1980. When DEC closed its facility, and as the manufacturing industry was diminishing, STCC turned the 15-acre site into a technology park. In 1996, the Springfield Technical Community College Technology Park became the first tech park in the country associated with a community college.

"We wanted to extend STCC's commitment to economic development in the region, to create jobs, bring in companies, and create a synergy for our graduates," says Thomas Goodrow, Vice President of Economic and Business Development at the college.

## Getting Started

Universities throughout the country are tacking research parks onto their campuses to draw growth companies to their regions. For some, especially urban universities, setting up a research park often means building into an existing neighborhood, but in Springfield the land and the infrastructure were already in place. STCC set out to transform abandoned industrial buildings into a place that would forward the technology-led economic development goals of the Pioneer Valley region.

With the help of a \$4.5 million grant from the state, the college acquired the land and set up the park. The same landmark legislation that funded the park mandated the creation of the STCC Assistance Corporation (STCCAC), a non-profit organization, to own and operate the park. "Something like this – the creation of the STCCAC – hadn't been done before in Massachusetts," Goodrow explains. "It was a major development."

It took some time, though, to get to that point. "It was a big challenge convincing community leaders that we were



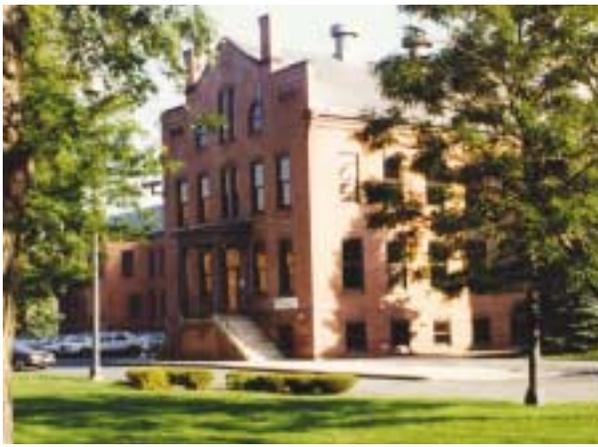
Groundbreaking ceremony for the Springfield Enterprise Center on October 6, 1998.

serious and that we could pull this off," says Andrew Scibelli, the college President. The college had to fight the misconception that the tech park would expand its holdings of non-taxable property; the tech park in fact now generates \$218,000 in property taxes annually to the city.

The STCCAC established three primary objectives: 1) develop a small business incubator, 2) move some of the technical programs from the college into the park, and 3) lease space to high-tech companies at commercial rates.

Seven years later, the technology park has 860 employees, 18 tenant companies, and a new business incubator, The Springfield Enterprise Center, with 21 companies. It is also home to four academic and workforce development programs.

"When it comes to economic development, community colleges clearly get it," commented Tim Brennan, Executive Director of the Pioneer Valley Planning Commission in Springfield, at a recent EDA-sponsored telecast on university-based partnerships in economic development.



Building 103 in the STCC Technology Park, constructed in 1890

**“Rather than expanding the college’s holdings of non-taxable property, the tech park actually generates \$218,000 in property taxes annually to the city.”**



below: CTC Communications worldwide network operations center in the STCC Technology Park

### The Wired Draw

The historic setting of the park belies its wired interior. The park’s high-tech tenants rely on the fiber and telecommunications networks, switching equipment and the overall “smart” environment of the buildings.

The Springfield area has a unique presence of overlaying fiber optic cables. The connectivity possibilities are invaluable to telecom companies, especially to smaller companies like Crocker Communications. “We got into the ISP business ten years ago in Northampton,” says Matthew Crocker, Vice President of Crocker Communications. “We wanted to expand into broadband and DSL and the tech park was the only place we could do that and stay competitive.”

### Impact on the Region

The college commissioned a study by the Center for Economic Development at the University of Massachusetts Amherst to analyze the park’s economic impact on the city and the region. “The management corporation realized that



there was a success story in the making,” said John Mullin, Director of the Center for Economic Development. “People were wondering what was going on in those buildings. They wanted to show the city that it’s a good investment.”

In addition to the over \$300 million that the STCC Assistance Corporation and tenant companies invested in facilities and equipment, the park pours another \$2.5 million into the city as a result of the management company’s policy of favoring local contractors and service providers. The purchasing power of park employees is estimated at \$17 million. And taking into account a multiplier effect, the tech park led to the creation of 1,223 jobs in the region, not including the 860 in the park.

Besides their effects in dollars and cents, the tech park companies have a sense of community ownership. SpringBoard Technology, the only company at the site to

## Regional Partnerships

Springfield Technical Community College is part of a broader effort to coordinate a technology-driven economic development strategy for the region, which resulted in the launch of the Regional Technology Corporation (RTC) in June 2003. RTC’s goal is to provide services that will foster the growth of technology-based businesses in western Massachusetts, specifically in three clusters – information technology, advanced manufacturing and materials, and biotechnology.

RTC aims to help companies form partnerships and commercialize technology. “We wanted to bring together industry in the region. People didn’t know companies in their own backyards,” says Humera Fasihuddin, Vice President of the RTC. “The manufacturing and materials cluster, for example, brought together companies that would have never come together otherwise. It created a forum to discuss new technology that could help them get into new markets and find partners,” he explains. “For example, by coming together, manufacturers could learn about microbials, which help stop the spread of germs on countertops. We now have over 15,000 people participating in our activities. Products are commercialized as a result of people meeting each other through RTC.”

The college works closely with the RTC to identify workforce development needs. “They enable us to go after high tech companies and assure them their workforce development will be met. We can let companies know that if they come here, STCC will build a curriculum to meet their needs,” says Fasihuddin.

predate the tech park, sees community involvement as part of its corporate ethic. For example, SpringBoard chaired the community's first African American business trade show for high school students, according to Chairman and CEO Anthony Dolphin.

There are four main reasons that the college has a significant economic impact on the region, according to Mullin: it concentrated on growth industries; focused on the city's strengths; took advantage of the historic industrial legacy; and built upon the symbiotic relationship between a tech college and a technology park. From an administrative perspective, Scibelli attributes part of the park's success to the STCC Assistance Corporation having hired a management company. "We were smart enough to know that we needed one, and we never could have done it without them," said Scibelli.

### Looking to the Future

The impact study highlighted the tech park's success in attracting businesses and generating jobs and revenue, but college officials recognize that to remain competitive, they must anticipate the future. "Because of the number of telecom companies, we're now looking forward to the second generation of clients," says Goodrow. "Who will they be and how can we provide real estate and workforce development for them?"

Scibelli emphasizes the need to diversify, but recognizes that whatever goes into the tech park has to have some relationship or synergy with the college. The college just kicked off a capital campaign to expand the small business incubator, with the goal of focusing on biotechnology, particularly in relation to manufacturing.

Meanwhile, companies at the tech park such as Crocker Communications, are forging ahead. "We're in the process of re-engineering our network so that we'll be able to provide



The Springfield Enterprise Center in the STCC Technology Park contains a small business incubator, a student business incubator, and the STCC Entrepreneurial Institute.



The STCC Technology Park was selected by the Economic Development Administration to receive the 2001 national award for Excellence in Urban Economic Development.

unique telecom services to downtown Springfield," says Crocker, "the type that you can normally only get in cities like New York or Chicago. High tech companies will be able to come in and know that they can get the services that they need."

Scibelli calls the park a high-risk entrepreneurial venture, but one with the potential for great success. "The numbers from the impact study are staggering," he says. "We've done everything we said we would and that's very rewarding."

★★★

# A Center of Innovation

*in Southeastern Ohio*

**By Pearl Kaplan**

Doug Williams was known as Mr. Impossible to the 25 to 40 miners that worked under him in the coal mines of Wilkesville in southern Ohio. If there was a problem that seemed impossible to fix, people turned to him. Williams is no longer a coal mine foreman, but he's still busy solving problems – now as a lead programmer for Electronic Vision, a full service multimedia company in Athens, Ohio.

Electronic Vision is one of seven companies that have graduated from Ohio University's Innovation Center, the first university-based technology business incubator in the state. Once known for its mining and manufacturing, the Athens area in southeastern Ohio is now home to over 80 technology companies, which Ohio University has been active in growing. Athens is a university town whose population doubles when Ohio University classes are in session.

"There has been a shift in focus over the past five to seven years to turn this place around and the university is committed more than ever to economic development," says Linda Clark, director of the 20-year-old Innovation Center. The Center has 13 companies and seven graduate companies, and since its inception has created more than 675 jobs in the region. In September 2003, the Center moved into new facilities, funded in part by an EDA commitment of over \$1.4 million.

Of the nearly 1,000 business incubators throughout the United States, around 25 percent are sponsored by academic institutions. "Since we're in Appalachia, we knew we had to

redefine our economic base and needed to bring the university intellectual base into the mix. The establishment of the Innovation Center [and] the idea of incubating businesses followed thereafter," explains Gary Meyer, the Assistant Vice President for Economic and Technology Development and Director of the Technology Transfer Office.

## Getting Businesses Started

The Innovation Center got started with two biotechnology start-ups. Diagnostic Hybrids Inc. (DHI), the world's largest cell culture provider, entered the incubator in 1983. "It was an eleven-year journey. The university nurtured us and in 1994 we developed our first FDA-approved product," according to David Scholl, DHI President and CEO. Now they have 106 employees and have moved back to the Center, but this time as their anchor tenant. "We wanted to be able to give back to the university," Scholl says. "Now, we try to help other small companies get started."

Electronic Vision was the first Internet technology company to start at the Innovation Center, and it was in and out in two years. "We decided multimedia advanced technology was something we could turn into a business plan," says CEO Dan Krivicich, who set up the company along with president David Burke. "We presented to the Innovation Center in 1985, which at the time was all biotech, and by 1987 we [had moved] out."

The Center helps innovators take an idea and turn it into a business, but entrepreneurs have to do their homework first. Getting into the incubator requires having a business plan, an identified market, and a plan for getting money to make it work. In return, the incubator provides benefits such as business development and mentoring services, flexible space, access to online databases, and printing services.

"When we started, we weren't full time," Krivicich explains. "We still had our day jobs. The Center provided us with office space at reasonable rates and gave us an address and phone answering service."

But the prime advantage of a university-based incubator is the resources available at the university, from access to faculty, students, and labs to a large network of contacts. "When we needed marketing help, we got OU business students to work with us," says Krivicich. "MBA students helped us out with everything from business plans to marketing and financing – something that otherwise would have cost thousands of dollars. The university provided a myriad of contacts and resources that, without them, we wouldn't have known about."

The relationship with the university works both ways. Over 150 students have worked at the Center since it opened. "These students gain real life, on-the-job experience in net-



Ohio University's Innovation Center was the first university-based technology business incubator in the state.

work administration, marketing research, database management, accounting, and other skills,” says Clark. Students often cite their experience at the incubator as the reason they were hired after graduation.

The Innovation Center merges innovation with commercialization. About half of the businesses in the incubator stem from university start-ups. The Center also is partnered with the university’s Technology Transfer Office. “Since tech transfer and the Center are joined at hip, we’re always looking for invention disclosure and trying to figure out how it can be made into a company, or to see if it fits in with an already existing company,” Meyer explains. “It’s an interesting mix, because the natural inclination is to figure out how to market the technology separately. Here it’s a continuous cycle.”

The university setting also provides a more nurturing, less cutthroat business environment. “Their goal goes beyond making money,” says Scholl of DHI. “They didn’t try to push us out for going slowly. The university was unbelievably patient in letting us try to get it right.”

### **Moving Towards Technology**

The incubator’s focus on technology is part of a larger trend in the state and across the nation. Cities throughout the country are butting heads as they try to draw young, talented people, particularly those in knowledge-based fields.

According to a 2003 Brookings report, the factors that made cities such as Seattle, San Francisco, and Austin the centers of the high-tech boom are the same factors that are keeping people there now. What they have in common is venture capital to support technology-based startups, strong research universities, a diverse urban lifestyle, and a strong local workforce with tech training.

“We emphasize tech because in the long run, it has the best potential for producing businesses that can make a substantial contribution to the economic climate,” Meyer explains. “We do anything we can to keep the tech start-ups here, whether they need help finding financing and land or putting together pro formas.” Ohio University has even started some local venture capital firms so that companies have places to turn to when they’re ready.

Sustaining local growth involves a wide assortment of factors. For DHI, transport infrastructure was key. “When we first started, we thought we might have to move,” Scholl says, “but FedEx proved us wrong.” DHI’s business relies on the delivery of their product – if their cell culture products aren’t there the next day, they don’t make it.

For Athens, rebuilding the economy with its tech sector has been promising but challenging. “As mines closed, there was a negative impact on the economy and much of the population was at the poverty level,” explains Fred Baughman, the president of Athens Chamber of Commerce. Manufacturing employment also has taken a hit, as it has elsewhere around the country. While the insurgence of tech firms can’t make up for all the job loss, Baughman says the number of former mining and manufacturing workers who have switched over is small but growing. Around 10 percent of the employees at DHI come from manufacturers in the area that downsized and laid off workers. But Scholl says the



The prime advantage of a university-based incubator is the resources available at the university, from access to faculty, students, and labs to a large network of contacts.

Athens region benefits from what he calls the “coal miner’s ethic,” tough and hard working.

### **Measuring Success**

Incubating a business is only the first step to success – the real test is of a business’s ability to survive once it’s out. Companies can get too comfortable in incubation. “Nationally, sometimes, clients have had a hard time leaving the crib,” Krivicich says. “We were part of the incubator for two years. I think that’s the shorter end. We viewed the Innovation Center as an incubator and once we had the wherewithal and the cash flow, we moved out.”

Meyer considers a business a success if it lives for more than five years after coming out, a standard measure for businesses in general. Both Diagnostic Hybrids and Electronic Vision have long passed that mark. In all, around 80 percent of the companies that have come out of the incubator are still in business. And more importantly, most firms have stayed in the area. “It’s hard to get companies to move in, but once they’re grown here, they stay here,” Meyers tells.

DHI not only stayed in the area but returned to the Innovation Center as an anchor tenant. They no longer need the Center’s back-office support and they rent nearly a quarter of the space, which translates into profit for the incubator. “We make meeting financial obligations easier for the incubator and we also mentor and provide assistance to the start-ups,” Scholl said. The university address also helps DHI with their recruiting.

“Ohio University has been incubating technology-oriented businesses for some time, says Jeff Finkle, President and CEO of the International Economic Development Council and an OU graduate. “They have had a great number of successes and the university has been very supportive of their efforts, including investing in some of the businesses. For a rural university in Appalachia, it has demonstrated real results.” ★★★

# Technology Transfer and Commercialization:

## *Their Role in Economic Development*



“Technology Transfer and Commercialization: Their Role in Economic Development,” a report prepared for the U.S. Economic Development Administration, is now available for download at [www.tech-links.net/ttc.pdf](http://www.tech-links.net/ttc.pdf).

Many U.S. regions are actively pursuing advanced technology-focused development strategies. With many jobs shifting to lower-cost locales, or eliminated through competition and improved productivity, state and local policymakers across the country believe

that encouraging the creation of innovative higher value-added goods and services will bring job and income growth. In particular, they are emphasizing programs that promote corporation access to external sources of technical knowledge, such as local universities and hospitals, for the purpose of creating innovative technologies (technology transfer) and the transformation of these innovations into successful products (commercialization).

The report aims to provide public officials, development practitioners, and researchers with a greater understanding of the relationship between the creation and commercialization of new technologies and regional economic development. It begins by outlining the causes and effects of the radical restructuring of the U.S. economy that necessitates technology-focused development strategies. For readers without a technology background, the report goes on to define and describe a typology of technology transfer and commercialization activities.

Seeking a realistic assessment of the potential for technology-based development in various regions across the U.S., the study addresses questions such as: Where does technology development and commercialization activity take place in the United States and why? Are rural areas and smaller metro areas as likely to be sites for technology development and commercialization activity as larger metro areas? How important is the presence of public R&D (carried out at uni-

versities, nonprofit research institutes, and federal laboratories) for technology-based development? Will new technology products be produced in the locations where they were invented? The report examines data for all 318 U.S. metropolitan areas and an extensive analysis of the literature.

Key findings include:

- Almost all innovation takes place in metropolitan areas.
- Less than a fifth of metro areas specialize in patenting (that is, have a share of U.S. metro patents greater than the share of metro jobs). Two-thirds of metro areas with over 1 million jobs specialize in patenting, compared to 14 percent of smaller metro areas. Larger metro areas have an advantage in the innovation process due to their greater specialization and diversity.
- Public R&D located in large metro areas is far more likely to lead to local corporate technology development than public R&D in rural and small metro areas.
- While innovation activity (as measured by patents and industrial R&D) correlates with higher annual wages, it does not correlate with growth in total regional jobs and income.
- While technology development is drawn towards relatively few large centers, commercialization is taking place across the global landscape according to the competitive advantages of local areas for carrying out particular production, distribution, management, and technical functions.

Thus, many regions outside of major metropolitan areas have difficulty competing in technology development and in retaining the jobs created by commercialization; however, they do have significant opportunities to specialize in certain aspects of commercialization of technologies created elsewhere.

The report ends by outlining models and options for regional technology transfer and commercialization programs and discussing ways in which existing development organizations can interact with such programs. The report also discusses the design of such programs in light of the realities of the geography of innovation.

Contact Andrew Reamer with comments and questions regarding the report, at (617) 795-7035 or [reamer@thecia.net](mailto:reamer@thecia.net). The report is available at [www.tech-links.net/ttc.pdf](http://www.tech-links.net/ttc.pdf). ★★★

# Partners on a Mission:

## *Federal Laboratory Practices Contributing to Economic Development*

The U.S. Department of Commerce's Technology Administration (TA) released a report in November 2003 highlighting the best practices of seven federal laboratory partnerships and two intermediary programs for their effectiveness in working with entrepreneurs, local business groups and higher education to support technology-led economic development.

TA's Office of Technology Policy contracted with Innovation Associates, Inc. (IA) of Reston, Virginia, to research and write the report, "Partners on a Mission: Federal Laboratory Practices Contributing to Economic Development," to help inform other labs, communities, and policy-makers across the country about steps they could take to support innovation and transfer technology to the private sector, to create jobs, products and companies. The study also identified a variety of efforts to enhance the local workforce, aimed at stimulating interest in science and technology careers.

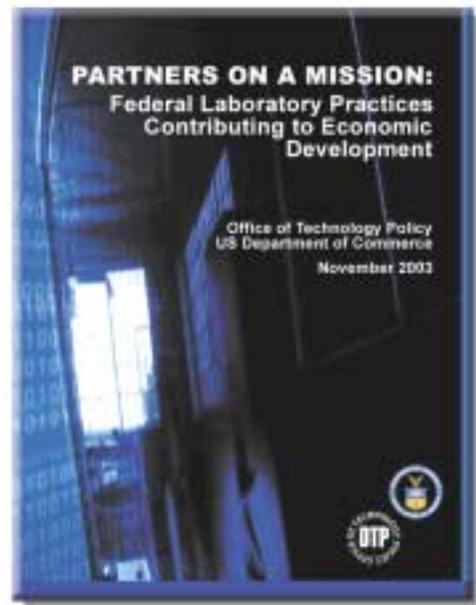
Key findings of the report include:

- **Technical and business assistance, now a peripheral activity for most federal labs, can be beneficial to the federal labs' technology transfer mission.** Programs such as the business assistance and Mentor Protégé programs at Sandia National Laboratories (SNL) enable technology enterprises to commercialize technologies originating at federal labs. They also augment and enhance technology supply chains that enrich the laboratories and the private sector. Federal lab activities performed in conjunction with universities - such as Pacific Northwest National Laboratory's (PNNL) use of MBA students to conduct marketing studies on lab technologies, and Los Alamos National Laboratory's (LANL) use of university interns as technology scouts - leverage university and federal laboratory strengths.
- **Entrepreneurial leave programs are potentially valuable mechanisms for promoting commercial use of laboratory technologies and know-how.** Entrepreneurial leave programs at some DOE laboratories were shown to promote technology transfer by encouraging lab employees to start their own businesses and assist other businesses to mature and adapt lab technologies for commercial and government use. Entrepreneurial leave programs benefited the government by improving the supplier pool available to the labs and benefited the community and region by increasing and enhancing start-up enter-

prises. Entrepreneurial leave programs also were shown to improve the labs' ability to recruit and retain productive employees who may have been attracted to other research organizations that provide flexible opportunities to carry their basic research through to practical applications.

- **By sponsoring and/or participating in entrepreneurial, seed and venture capital, and business networking events, some federal laboratories are contributing valuable technical expertise and credibility to these events.** For example, through conference and liaison activities, the Patuxent Partnership in Maryland brings the Naval Air Warfare Center Aircraft Division closer to regional sources of suppliers, other businesses, universities, and local and state policy makers. Several labs sponsor or participate in venture capital forums.

- **A number of labs have developed research parks and incubators at or near laboratory facilities; the study showed that research parks were attracting research corporations and major suppliers that work with the labs, bringing them closer to the source of R&D and promoting access to lab researchers and facilities.** Some incubators, such as the Tri-Cities Enterprise Center associated with PNNL, offer business assistance and technical support to help enterprises commercialize technologies originating in PNNL. But the study warns that proximity alone appears insufficient to ensure effective linkages between enterprises in parks/incubators and labs; labs and economic development organizations should facilitate these linkages.



- *Education programs were popular among lab managers and employees as well as the communities included in the study.* These programs contribute to the future talent pool available to labs and promote federal labs as “good neighbors.” Programs such as the Science, Engineering, Mathematics, and Aerospace Academy sponsored by NASA Glenn provided academic enrichment and career awareness that encourage K-12 students to pursue math and science careers. These types of programs may help insure a future pool of scientists. Federal labs that sponsored tours of R&D facilities and dispensed mobile lab units to schools gave students and teachers an unusual opportunity for “hands-on” experience with sophisticated technologies.

The study noted that the “valley of death” – the gap between originating research ideas and “proofs of concept” and their possible commercial application – remains a major obstacle to maximizing economic development benefits from federally funded R&D. The study suggests that it may be timely to engage federal policy makers in a dialogue to consider available options and whether new initiatives might be warranted, such as through a national advisory committee. The study also suggests that labs may experience difficulties in filling technical and scientific positions, and that policies aimed at meeting future labor needs should be considered.

In conclusion, the study found that strengthening the business communities in which the labs are located appears

to make good economic sense for the communities and states in which labs are located and for the federal laboratories. Building stronger, higher-quality enterprises provides better suppliers for the labs; stimulating science and engineering interest in students develops a stronger future labor pool; and working in more effective and flexible ways with business and industry insures that federal laboratory-inspired technologies and knowledge will be transferred and commercialized. Moreover, fostering maturation and commercialization of federal lab technologies through business and technical assistance and entrepreneurial programs adds value to lab technologies, sometimes contributing back to the lab higher quality technologies than the original, and raising the scientific and engineering bar higher for all.

The report is available at the Technology Administration’s Web site, <http://www.technology.gov/reports.htm> and IA’s Web site at: [www.InnovationAssoc.com](http://www.InnovationAssoc.com). For more information, contact Diane Palminteri, President of Innovation Associates and author of the report, at [DPalminteri@InnovationAssoc.com](mailto:DPalminteri@InnovationAssoc.com) or (703) 925-9402.

★★★

Source: Executive summary, “Partners on a Mission: Federal Laboratory Practices Contributing To Economic Development,” by Diane Palminteri.

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Manuscripts are invited and should be addressed to the editor. The next three issues of *Economic Development America* will focus on the following topics:

- **April 2004:** Regionalism - Maximizing Effective Partnerships for Economic Development in an Era of Scarce Resources
- **July 2004:** Economic Development Strategies in a Global Economy
- **October 2004:** New Directions and Opportunities in Rural Economic Development

For more information on submitting an article to *Economic Development America*, please contact Louise Anderson, Editor, via email at [landerson@iedconline.org](mailto:landerson@iedconline.org), or telephone (828) 350-8855.

The Economic Development Administration's University Center Program provides annual funding to higher-education institutions throughout the United States for the support of local and regional economic development. There are currently 69 University Centers located in 45 states and the Commonwealth of Puerto Rico.

Centers generally undertake three broad categories of activity: direct technical assistance to clients, applied research, and information dissemination. Technical assistance activities typically have one of two types of clients, economic development organizations or individual businesses.<sup>1</sup>

"We have a chicken-egg syndrome – no one wants to be open if nobody else is," says Janet Kennedy, executive director of Lakes to Locks Passage. So Kennedy and others hatched a strategy to break the cycle. One of the elements is to add a year-round, country inn to Ticonderoga, a tourist hub for the area.

But if they build it, will people come? Kennedy invited TAC-SUNY to help figure it out. The TAC, working with faculty from the Hotel, Restaurant and Tourism Management department in the School of Business and Economics, prepared a feasibility study for the hotel, which confirmed that the business could be successful. The proper infrastructure is in place, and by coordinating activities among several groups – namely Fort Ticonderoga, International Paper Company, and the Town of Ticonderoga – there will be enough activity to warrant year-round operation.

Now the community is using the TAC study to boost its chances for a USDA Rural Business Opportunity Grant (RBOG). If successful, the community can use RBOG money for additional technical assistance, planning, or entrepreneur training.

### Doing more?

Though the center already strains to serve a large geographic area, Lowe says that the center would like to increase its role in the region. "We'd like to grow our program in order to provide more service – get more faculty involved in the economic development projects," he says. How? "We're right next to Canada so we'd like to track, analyze, and document bi-national business data," Lowe says. "The volume of Quebec-New York business is a research opportunity for TAC and PSU faculty." ★★★

(continued from page 22)

When new ventures survive, the results can be spectacular. CellTrack's product, Communication Assisted Tracking, allows corrections officers to communicate with monitored offenders who cross into exclusionary zones. Using digital cellular technology and Global Positioning Satellite readings, tracked individuals receive verbal warnings from authorities, and have a chance to redirect themselves.

Marion County, Indiana's most populous, has agreed to implement the technology, and the product is catching on statewide, says Pobanz. "Since we landed our contract with Marion, the rest of the state is falling in line."

### Looking ahead

Clients express satisfaction with Gateways services. "Our experience has been just great," says *gh's* Cravens. Still, the program is looking for ways to improve. One goal is to create a network of area angel investors and give them front row seats for company presentations. Another is to establish a community of professional service providers for Gateways clients, such as law firms, prototyping engineers, professional employee organizations and accounting firms. And a third is to increase alumni participation as volunteer mentors.

Meanwhile, the program continues contributing to a healthy growth environment for new ventures. "Here in the technology center, we're connected to the people we need to talk to," says Cravens. That means access to fellow young companies, and of course, Gateways staff. "We graduated from the program in June of 2000, but still work very closely with Gateways." ★★★

<sup>1</sup> "An Evaluation of EDA's University Center Program," Mt. Auburn Associates, Inc. with Brandon Roberts + Associates and Karl F. Seidman Consulting Services, December 2001.

## About Economic Development Information Coalition (EDIC) Partners

Part of the United States Department of Commerce, the **Economic Development Administration (EDA)** provides grants for infrastructure development, local capacity building, and business development to help communities alleviate conditions of substantial and persistent unemployment and underemployment in economically distressed areas and regions. Since 1965, EDA has invested more than \$16 billion in grants across all programs, including local public works and special initiatives such as responding to natural disasters and defense conversion, and has generated more than \$36 billion in private investment. For more information, visit [www.doc.gov/eda](http://www.doc.gov/eda).



The **International Economic Development Council (IEDC)** is the premiere organization for the economic development profession. Serving close to 4,000 members, IEDC is the world's largest professional membership organization providing a diversity of economic development services, including research and advisory services, conferences, professional development and legislative tracking. Visit IEDC's website at [www.iedconline.org](http://www.iedconline.org) to learn more about membership, upcoming events and IEDC services.



The **National Association of Regional Councils (NARC)** is the preeminent alliance for fostering regional cooperation and building regional communities. For more than three decades, NARC has represented multi-purpose regional councils of government that assist community leaders and citizens in developing common strategies for addressing cross-cutting transportation, economic development, air and water quality, social equity, growth, and other challenges, through advocacy, training, technical assistance and research. For more information, visit [www.narc.org](http://www.narc.org).



**NARC**  
*Building Regional Communities*

The **National Association of Development Organizations (NADO)** provides training, information and representation for regional development organizations in small metropolitan and rural America. The association, a public interest group founded in 1967, is the largest and leading advocate for a regional approach to community, economic and rural development and provides a network for its members to share ideas and innovations. For more information, visit [www.nado.org](http://www.nado.org).

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