PORTLAND REGIONAL ASSETS:

A Periodic Newsletter Highlighting Portland's Strategic Strengths and Challenges

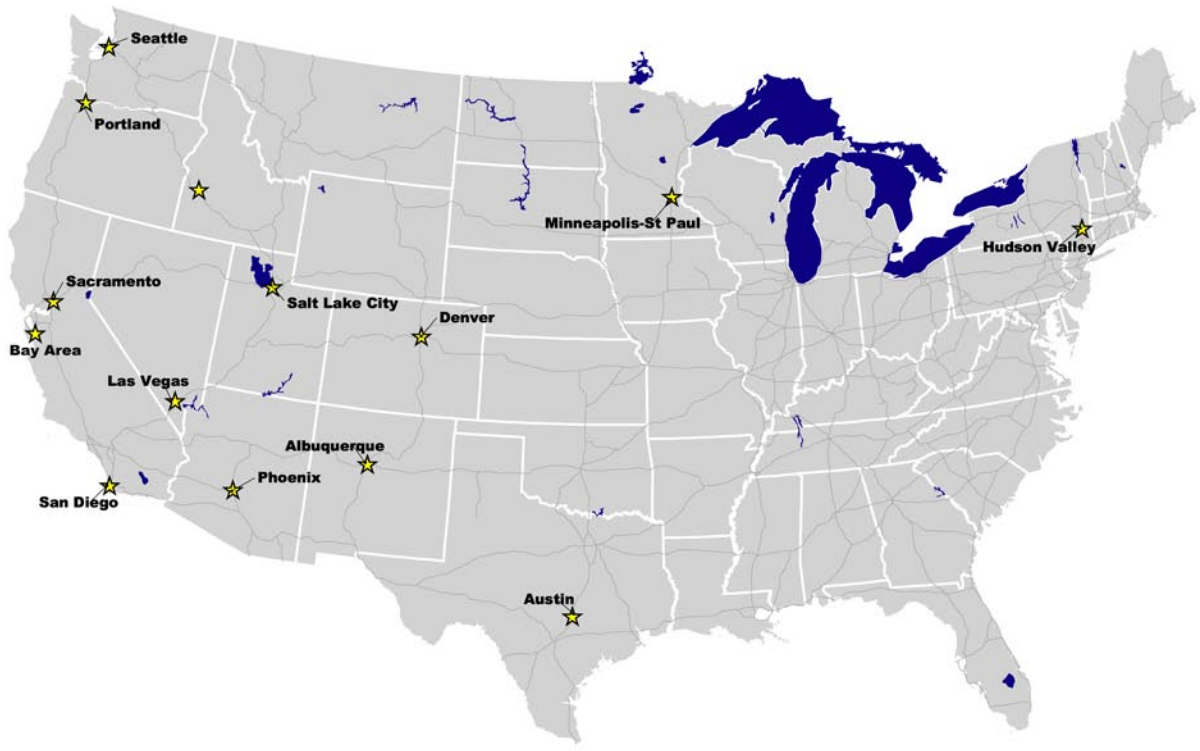
Spring 2005

Welcome

Welcome to the first edition of Portland Regional Assets! We've designed this newsletter in conjunction with The Portland Regional Partners for Business, also known as the Regional Economic Development Partners, or the Regional Partners, as a service to those working to improve economic conditions in the Portland Vancouver Metropolitan region.

This newsletter will focus on strategic regional economic issues. Each edition of the newsletter will examine a different factor affecting competition for talent, innovation, and capital, and present information about how the region compares with its competitor regions.

The Regional Partners have identified 13 areas as key competitor regions, as shown on the map: Albuquerque; Austin; Boise; Denver; East Bay area, CA; Las Vegas; Minneapolis-St. Paul; Phoenix; Sacramento; Salt Lake City; San Diego; Seattle; Upstate New York.



These areas compete with Portland for jobs, investment, and talent. The aim of the newsletter is to understand how our region compares with these regions in key competitive areas; to make our readers aware of changes that may affect our competitiveness relative to these regions; and to present research that speaks to the effectiveness of alternative competitive strategies.

This Issue: Innovation

This issue focuses on innovation. After an introduction to this topic as a strategic issue, we present a summary of indicators of this region's innovation assets compared with our competitor regions. Following the indicator summary, we offer news items related to innovation strategy from our competitor regions and from home. Finally, we present a list of recent research about innovation-based economic development strategy. We chose innovation as the topic of our first newsletter because of its fundamental importance to all sectors of our economy. Regardless of economic sector, new products, new production methods, and new markets are essential to achieving and maintaining a competitive position in global markets. Innovation improves our productivity, enhances our quality of life, and creates opportunity for small and large companies all over the world. A company that is not developing and testing new ideas in the market cannot survive because its competitors are innovating.

Recognizing the importance of innovation, the Oregon Economic and Community Development Department recently published the Oregon 2004 Innovation Index. This newsletter presents some of the same information contained in that index, but we attempt wherever possible to present information about the Portland Vancouver metropolitan area, rather than for the state of Oregon. We encourage you to peruse the Oregon Innovation index at http://www.econ.state.or.us/OCKEDrpt_811.pdf.

Preparing the indicators for this issue was challenging. Because of our desire to keep the indicators simple, we used secondary data sources and have cited these sources throughout this document. Much of the data relevant to the degree to which the region is innovative are available only at the state level. Some data that are available at the metropolitan level have not been updated for some time. Furthermore, the definition of metropolitan area is not always consistent among data sources.

We encourage you to view this newsletter as part of a broader effort by a number of leaders across the region to create greater awareness of the important strategic issues facing the Portland-Vancouver regional economy. Only by identifying and tracking indicators of progress on these strategic issues can we improve the economic future of our region.

We invite you to provide feedback on the content and structure of the newsletter. Please email us with your comments at ims@pdx.edu. Special thanks go to Meg Merrick for the newsletter layout and Katherine Krajnak for research assistance. You will be able to find archived editions of this newsletter at www.upa.pdx.edu/IMS/. Enjoy!

Sheila A. Martin, Institute Director

Innovation Indicators

In most comparisons of the innovation economies of metropolitan regions in the U.S., Portland ranks near the middle. Table 1 presents Technology Index rankings from the Beacon Hill Institute's Metropolitan Area and State Competitiveness Report for both 2003 and 2004. This index is a composite of state and metropolitan data R&D spending, patents, science and engineering graduates, technology payroll, and scientists and engineers as a percentage of the labor force. Portland ranked 21st in this index among the 50 metropolitan regions for both years. Among our eleven competitor regions, Portland ranked seventh in 2004, moving up from eighth in 2003. Austin, Seattle, Salt Lake City, San Francisco, Denver, and San Diego all ranked higher than Portland in both 2003 and 2004.

Metropolitan Region	Technology Index 2004		Technology Index 2003	
	Rank	Index	Rank	Index
Austin	4	5.87	6	6.24
Seattle	5	5.79	11	5.57
Salt Lake City	7	5.61	10	5.61
San Francisco	8	5.60	3	6.85
Denver	9	5.53	5	6.43
San Diego	10	5.42	13	5.54
Portland	21	5.01	21	5.05
Sacramento	23	4.97	23	5.03
Minneapolis - St. Paul	28	4.85	12	5.57
Albany*	32	4.78	---	---
Phoenix	39	4.63	34	4.49
Las Vegas	50	3.65	50	3.12

Table 1. Metropolitan Technology Index Rankings
Source: Competitiveness Report , Beacon Hill Institute, http://www.beaconhill.org/Compete04/Compete2004WebONLY.pdf

The Progressive Policy Institute released a similar ranking in April of 2001. Although the PPI's index and the data used to construct it are outdated, it does shed light on how Portland compared with its competitor regions prior to the onset of the most recent recession. Table 2 shows that the New Economy index placed Portland 20th among 50 metropolitan areas in its innovation capacity subindex.

But the real story of how the Portland region competes in an innovation economy lies in some of the key underlying factors that contribute to an innovative region:

- inventive activity,
- human capital, and
- financial capital

Metropolitan Region	Innovation Capacity Index 2001	
	Rank	Index
San Francisco	2	18.5
Austin	3	18.1
San Diego	6	11.7
Denver	7	11.5
Seattle	9	11.5
Minneapolis	10	10.6
Salt Lake City	11	10.1
Sacramento	12	10.0
Portland	20	9.5
Phoenix	27	8.8
Las Vegas	50	5.5

Table 2: Innovation Capacity Index
Source: The Metropolitan New Economy Index, http://www.neweconomyindex.org/metro/index.html

Inventive Activity

Patents are routinely used as an indicator of innovative activity. According to the 2004 Metro and State Competitiveness Report, the Portland region ranked 5th among 50 metropolitan regions for new patents issued in 2003 per 100,000 inhabitants. As shown in Table 3, San Francisco, Seattle, Salt Lake City, Albany, Denver, and Sacramento all ranked below the Portland Region.

Metropolitan Region	Rank
Austin	2
San Diego	4
Portland	5
San Francisco	8
Seattle	9
Salt Lake City	11
Minneapolis	20
Albany	34
Denver	35
Sacramento	40

Table 3. Patents Issued per 100,000 inhabitants, 2003, Metropolitan rankings
Source: Metro and State Competitiveness Report, Beacon Hill Institute, http://www.beaconhill.org/Compete04/Compete2004WebONLY.pdf

R&D spending provides an alternative indicator of innovative activity—one that indicates innovative effort, rather than innovative output. Data on R&D spending are only available at the state level, and the most recent data available are for 2002. Oregon's spending on R&D is largely driven by the private sector and is very volatile. While Oregon ranked 6th in the nation in total R&D spending in 2001, it ranked 23 rd in 2002, largely due to the large cutback of R&D spending by industry. Figure 1 shows total R&D and industry R&D spending for our competitor states. As shown in Table 4, Oregon has the third highest percentage of industry R&D spending. As industry R&D tends to fluctuate more than other R&D funds, Oregon's total R&D spending has changed from $2,116 million in 2000, to $5,447 million in 2001, to $2,982 million in 2002.

Figure 1. 2002 R&D Spending Per $1,000 GSP

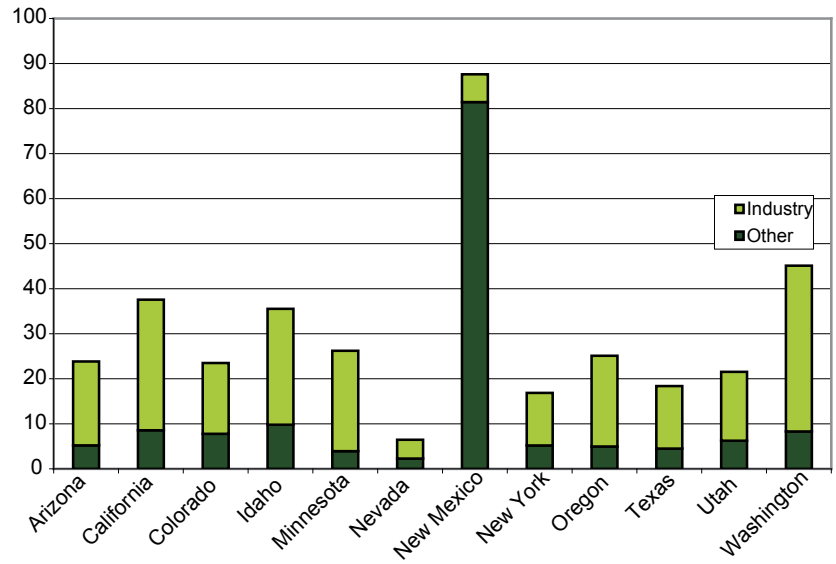


Figure 1 Sources: GSP: Bureau of Economic Analysis, http://www.bea.gov/bea/regional/gsp/
R&D: NSF, Science and Engineering State Profiles 2001-2003, http://www.nsf.gov/sbe/srs/nsf05301/

State	Total R&D, $Millions	Industry R&D, $Millions	% Industry of Total R&D	Total R&D per $1,000 GSP
Arizona	4,096	3,201	78.1%	$23.84
California	51,388	39,664	77.2%	$37.57
Colorado	4,218	2,823	66.9%	$23.51
Idaho	1,370	992	72.4%	$35.53
Minnesota	5,247	4,460	85.0%	$26.23
Nevada	524	339	64.7%	$6.45
New Mexico	4,689	331	7.1%	$87.62
New York	13,354	9,234	69.1%	$16.86
Oregon	2,892	2,320	80.2%	$25.12
Texas	14,223	10,744	75.5%	$18.39
Utah	1,572	1,116	71.0%	$21.54
Washington	10,511	8,579	81.6%	$45.12

Table 4. R&D Spending by State, 2002
Sources: GSP: Bureau of Economic Analysis, http://www.bea.gov/bea/regional/gsp/
R&D: NSF, Science and Engineering State Profiles 2001-2003, http://www.nsf.gov/sbe/srs/nsf05301/

Human Capital

The second innovation input, human capital, is an area where Portland has a mixed record. Educational attainment in the Portland region is higher than the nation as a whole. According to the 2000 US Census, 28.8% of the population older than 25 holds a bachelor's degree or higher in the Portland-Vancouver metropolitan area, compared to 24.4% for the nation. This puts the Portland region squarely in the middle compared with its competitor regions.

PhD Scientists and Engineers in the labor force conveys the degree to which our workforce is engaged in high-level scientific research and innovation. In 2001, 7,260 and 1,460 Ph.D scientists and engineers resided in Oregon, respectively, again ranking Oregon in the middle. As a percentage of the labor force, five of our competitor states ranked higher.

Metropolitan Region	Percent
San Francisco—Oakland—San Jose, CA CMSA	37.3
Austin-San Marcos, TX MSA	36.7
Denver—Boulder—Greeley, CO CMSA	35.5
Minneapolis-St. Paul, MN—WI MSA	33.3
Seattle—Tacoma—Bremerton, WA CMSA	32.0
San Diego, CA MSA	29.5
Portland—Salem, OR—WA CMSA	28.4
Albuquerque, NM MSA	28.4
Albany--Schenectady--Troy, NY MSA	28.2
Boise City, ID MSA	26.5
Salt Lake City--Ogden, UT MSA	26.5
Phoenix—Mesa, AZ MSA	25.1
Las Vegas, NV—AZ MSA	16.4

Table 5. Percent of 25-34-year-old adults with a 4-year Degree or Higher
Source: US Census, Demographic Profiles, http://censtats.census.gov/pub/Profiles.shtml

Figure 2. Ph.D. Scientists and Engineers, Percent of the Labor Force

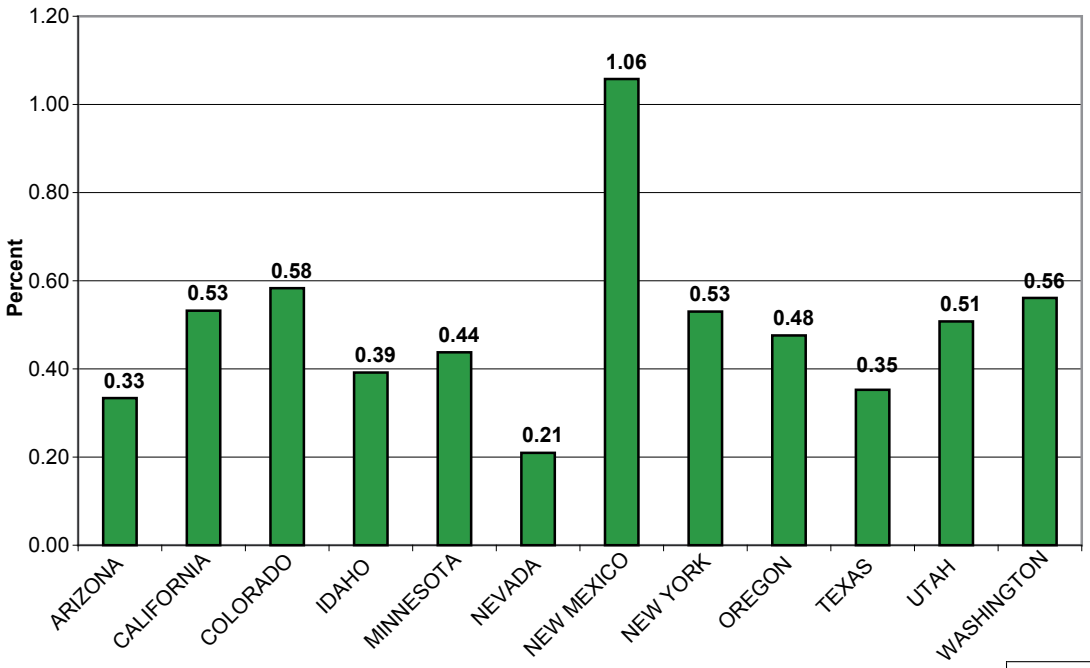


Figure 2
Source: NSF, Science and Engineering State Profiles 2001-2003, http://www.nsf.gov/sbe/srs/nsf05301/

Table 6. Number of Science and Engineering PhDs awarded, 2002
Source: NSF, Science and Engineering State Profiles 2001-2003, http://www.nsf.gov/sbe/srs/nsf05301/

Oregon produces very few new PhDs in Science and engineering compared with its competitor regions. In 2002, Oregon produced only 233 new Phds in science and engineering. All of our competitor states, except for Idaho, Nevada, and New Mexico produced more. Table 6 shows the number of science and engineering doctorates awarded for each competitor state.

State	S&E PhDs 2002
Arizona	417
California	3,232
Colorado	457
Idaho	50
Minnesota	403
Nevada	61
New Mexico	176
New York	2,124
Oregon	233
Texas	1,462
Utah	265
Washington	460

Table 6

Attracting young talent is one of Portland's comparative advantages. According to research conducted by Impresa and Coletta and Company (http://www.colettaandcompany.com/public/city_news/reports.cfm), Portland's share of 25-34 year olds with a 4-year degree is about 29%, ranking 27th of the 50 largest US metropolitan areas in college attainment of its 25 to 34 year-old population. This percentage grew by 50% in the Portland region from 1990 to 2000, giving Portland the fourth highest growth rate among the fifty largest metro regions. Rankings and growth rates for selected competitor regions are listed in Tables 7 and 8.

Despite the region's success at attracting talent, the Portland-Vancouver metropolitan region is underutilizing its human capital resources. Without increasing our efforts to educate our own citizens and develop the skills required to compete globally, the Portland-Vancouver region will fall farther behind as other regions invest in improving the educational status of their citizens. Employers will choose locations that offer the most productive labor force and the opportunity to compete successfully.

Metropolitan Region	Percent	Rank
San Francisco—Oakland—San Jose, CA CMSA	41.3	3
Minneapolis-St. Paul, MN—WI MSA	39.9	5
Austin-San Marcos, TX MSA	38.9	6
Denver—Boulder—Greeley, CO CMSA	38.1	7
Seattle—Tacoma—Bremerton, WA CMSA	34.2	14
Portland—Salem, OR—WA CMSA	29.0	27
San Diego, CA MSA	28.7	30
Phoenix—Mesa, AZ MSA	24.6	44
Las Vegas, NV—AZ MSA	16.3	50

Table 7. Share of 25-34 Population with a 4 year degree or higher
Source: The Young and the Restless: Portland Competes for Talent, http://www.pdc.us/pdf/bus_serv/pubs/young_and_restless.pdf

Metropolitan Region	Percent increase	Rank
Las Vegas, NV—AZ MSA	104.6	1
Austin-San Marcos, TX MSA	56.2	3
Portland—Salem, OR—WA CMSA	50.0	4
Denver—Boulder—Greeley, CO CMSA	40.1	6
Phoenix—Mesa, AZ MSA	39.2	7
Seattle—Tacoma—Bremerton, WA CMSA	22.9	15
San Diego, CA MSA	3.6	36

Table 8. Increase in 25-34 Population with a 4-Year Degree or Higher, 1990 - 2000
Source: Cortright, Joseph. The Young and the Restless: How Portland Competes for Talent, http://www.pdc.us/pdf/bus_serv/pubs/young_and_restless.pdf

Financial Capital

Venture capital provides the fuel that allows entrepreneurs and innovators to test their ideas in the marketplace. Figure 3 shows the total amount of venture capital invested in Portland and in each of its competitor regions in 2004.

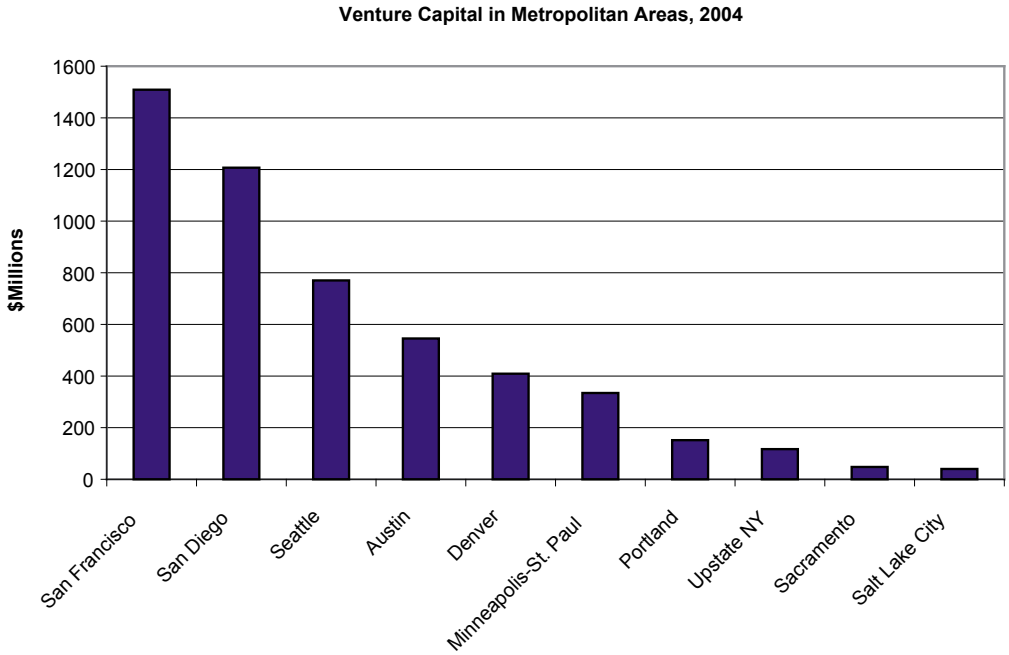


Figure 3 Source: PricewaterhouseCoopers/Thomson Venture Economics/NVCA Moneytree Venture Capital Profiles
http://www.ventureeconomics.com/vec/stats/2004q4/0MAINMENU.html

San Francisco and San Diego lead the list of regions in 2004 with the greatest amount of venture capital investments (see Table 9). Most regions saw an increase from 2003. San Diego experienced the greatest increase from $786 million in 2003 to $1206.9 in 2004. Portland's investments, $151.7 million, exceeded those of upstate New York, Salt Lake City, and Sacramento.

In the final quarter of 2004, Portland showed the greatest venture capital investment in retailing/distribution and semiconductors. Sacramento and San Diego both had significant investments in semiconductors as well.

Metro Region	Rank	Venture Capital 2004 ($millions)	Leading industries (in last 2 months of 2004)
Austin	4	$545.2	Software, Computers and Peripherals, Medical Devices and Equipment, Electronics/Instrumentation
Denver	5	$409.0	Software, Media and Entertainment (8.8)
Seattle	3	$770.1	Software, Medical Devices and Equipment (18.8)
Portland	7	$151.7	Retailing/Distribution, Semiconductors
Sacramento	9	$47.8	Semiconductors
San Diego	2	$1206.9	Biotech, Semiconductors, Medical Devices and Equipment
San Fran	1	$1509.0	Software, Biotech, Media and Entertainment
Salt Lake city	10	$40.1	N/A
Minneapolis-St.Paul	6	$334.3	Medical Devices and Equipment, Electronics/Instrumentation, Media and Entertainment
Upstate NY	8	$116.7	N/A

Table 9. Venture Capital invested in Metro regions, 2004
Source: PricewaterhouseCoopers/Thomson Venture Economics/NVCA Moneytree Venture Capital Profiles
http://www.ventureeconomics.com/vec/stats/2004q4/0MAINMENU.html

Innovation News Items

U.S.

Venture capitalists have over $53.6 billion in unspent funds

Dow Jones Venture One reported more than $53.6 billion in unspent venture capital funds. According to the San Francisco-based research company, the large amount of unspent funds is a positive sign in that they will most likely be allocated to early-stage companies.
http://www.bizjournals.com/sacramento/stories/2005/03/21/daily29.html?f=

Popular Science ranks the nation's high-tech cities

Among U.S. cities, Minneapolis was named the Top Tech City, San Diego was awarded top city for medical and emergency tech, and San Jose for high tech jobs.
http://www.popsci.com/popsci/generaltech/article/0,20967,1027545,00.html

California

California universities dominate in patents

The Department of Commerce's United States Patent and Trademark Office (USPTO) announced the top 10 U.S. universities receiving the most patents during calendar year 2004. The University of California tops the list for the 11th consecutive year.
http://www.uspto.gov/web/offices/com/speeches/05-18.htm

SACTO plans to attract 5 industries

A five-year regional economic development plan has been drafted by the Sacramento Area Commerce and Trade Organization (SACTO). SACTO plans to build on regional cooperation via Partnership for Prosperity, a set of new economic development strategies.
http://www.bizjournals.com/industries/economic_view/economic_snapshot/2005/03/21/sacramento_story5.html?f=et157

Colorado

OEDIT Announces Advance Colorado Center

The Colorado Office of Economic Development and International Trade (OEDIT) announced the formation of the Advance Colorado Center (ACC). The ACC will be housed in the same World Trade Center in Denver. Its primary mission is to provide support for fledgling non-profit associations and business support programs that will meet the needs of targeted industries within Colorado.
http://www.state.co.us/oed/press_detail.cfm?article=%23%29H6E%0A

Minnesota

**Governor Pawlenty Launches Statewide Competition for "Breakthrough Ideas"
March 9, 2005**

Minnesota Governor Tim Pawlenty today announced a statewide contest to seek out and support Minnesota's newest and most innovative business ideas by connecting resident entrepreneurs with the state's leading executives, investors, and the University of Minnesota.
http://www.deed.state.mn.us/news/release/2005/bus09Mar05govern.htm

New Mexico

New Mexico Fifth in Nanotech Ranking

Lux Research, a New York-based consulting firm, ranked states based on their potential in the nanotechnology industry. New Mexico ranked fifth behind Massachusetts , California , Colorado and Virginia.
http://www.bizjournals.com/albuquerque/stories/2005/01/24/daily19.html

New York

$2.7 Billion Boost for Albany's Tech Valley

A number of microchip companies, amongst them, IBM and ASML of the Netherlands, are due to invest some $2.7 billion in the Albany area and the Hudson Valley. New projects could bring as many as 1,000 new jobs.
http://www.timesunion.com/AspStories/story.asp?storyID=320279&category=STATE&newsdate=1/5/2005

CEG, Albany-Colonie chamber seek $11M for 5-year plan

Center of Economic Growth Inc. (CEG) and the Albany Chamber of Commerce are pursuing a joint venture to raise $11 million Albany 's new high tech valley development. The five-year initiative, Advancing Tech Valley , will fund projects that seek to educated communities about how to prepare for the new infrastructure and workers in the area.
http://www.bizjournals.com/albany/stories/2005/03/21/story5.html?GP=OTC-MJ1752087487

Oregon

Compiere lands at the Portland Business Accellerator

Compiere, a small open-source software company providing enterprise resource planning and customer relationship management applications to small and medium-sized businesses worldwide, has decided to relocate from Connecticut to the Portland Business Accelerator at Portland State University.
http://www.pdc.us/new/releases/2005/0406.asp

Washington

Other states court Washington biotech companies

More states are competing to lure biotech companies. According to the Biotechnology Industry Organization, forty states are now developing biotech clusters and development as opposed to fourteen states in 2001.
http://www.bizjournals.com/industries/economic_view/economic_snapshot/2005/03/21/seattle_focus1.html?f=et157

Dynamic Cities and Creative Clusters, A recent report sponsored by the World Bank and conducted by Weping Wu at Virginia Commonwealth University, explores the factors and policies that contribute to clustering of particular creative industries. Dynamic Cities and Creative Clusters is available at:
http://d.repec.org/n?u=RePEc:wbk:wbrwps:3509&r=all

Innovation Research Reports

Enhancing Competitiveness: A Review of Recent State Economic Development Initiatives, a recent report by The National Governor's Association Center for Best Practices, offers a review of economic development initiatives by the states during the period of September 2003 to September 2004. It includes an appendix with a description of over 125 initiatives by the states in the following areas:

- Skilled workforce, by providing training and education to meet industry needs.
- Promoting research and development
- Supporting local entrepreneurs
- Developing rural areas
- Supporting tourism and cultural activities
- Improving business attraction
- Marketing the state

The report can be downloaded at:
http://www.nga.org/cda/files/0501COMPETITIVENESS.pdf

Small Times Magazine ranks nano states

Small Times has produced its annual ranking of the states and nanotechnology. It appears in the March 2005 issue; details are also available at http://www.smalltimes.com/magazine.cfm

Socio-Economic Impact of Nanoscale Research: Initial Results and NanoBank This March 2005 working paper from the National Bureau of Economic Research (No. 11181), by UCLA's Lynne Zucker and Michael Darby, offers preliminary results from a project called NanoBank that seeks to assess the state of nanoscale science and technology. The paper can be downloaded here: http://www.nber.org/papers/W11181.

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