Not Invented Here:

The 2004 Southern Innovation Index

A publication of the Southern Growth Policies Board

southern growth policies board

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for Southern Growth Policies Board.

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Contents

When a Southern governor and legislators work together to construct a state's budget, they hope that the expenditures will be viewed as investments in that state's future. Like any investor, states have limited funds to invest in their portfolios, among investing instruments such as education, healthcare and businesses. A state's investment strategy, if successful, provides strong returns on investment — for example, a thriving economy — which can then sustain future investments.

This third edition of the *Southern Innovation Index* is a kind of stock market report on our investments in the economic area with the biggest potential payout. *The Index* consists of 50 indicators that measure the South's progress towards leadership in this economy, with state targets for each indicator. [1] Each indicator represents a consequence of investment decisions.

The Index represents serious work by the Southern states in a unique regional effort. It represents a commitment by thirteen states and Puerto Rico to performance-based management, a transparent process of goal-setting, strategic action and public accountability. The words of the 2002 report still ring true: *No other region in the U.S. has a similarly ambitious initiative.*

Background

The *Southern Innovation Index* is part of the *Invented Here* initiative by Southern Growth Policies Board (SGPB) and the Southern Technology Council (STC). The *Invented Here* initiative is the utilization of technology and innovation for economic growth. The initiative consists of reports, conferences, presentations and databases.

The First Report

The first report, issued in July of 2000, was *Invented Here: Measures of Southern Growth*. It was an exhaustive compilation of existing data on the Southern economy, especially those measures relating to technology and innovation. Issued as a CD-ROM, this report provided the foundation for a regional strategic plan for building a technological economy.

The Second Report

The second report in the series was *Invented Here: Transforming the Southern Economy*, which introduced nearly 75 indicators of innovation progress, three major goals and 13 objectives. More than 300 people interested in technology-based economic development participated in surveys, retreats and focus groups to identify and draft the goals and benchmarks. The process represented the collaborative best thinking on the topic. The goals and their objectives were adopted by the Southern Growth Policies Board during its annual meeting in June, 2001. They appear on page 13 of this report.

The Third Report

The third report, *Invented Here: The 2002 Southern Innovation Index*, presented 10-year targets for each indicator. Each state devised its own targets, thereby competing only against itself in its progress. Other indices such as Milken Institute's *State Technology and Science Index*, which ranks states according to their technology prowess, do not consider the heterogeneity of each state's circumstances and past. Such indices pit state against state without regard to geography, topography or history. For example, Milken's poorly ranked technology states are almost always the most rural states. With each state setting its own targets, what matters is not how a state stands in relation to some other state, but where it strives to be in ten years — where it stands in relation to its own vision of itself. What matters is progress. Now, many Southern states have created their own indices including Alabama, Mississippi, North Carolina, Louisiana and Oklahoma.

The Fourth Report

This fourth edition of the *Invented Here* series — *Not Invested Here* — includes many updated indicators as well as analysis of the differences between the updated indicators and their 2002 report counterparts. This edition includes new data for every indicator if available at the time of investigation. However, new data are not available for all of the benchmarks, so some of these remain the same as in the last report.

Since the creation of the *Southern Innovation Index*, Southern Growth has added three new advisory councils (one each dedicated to community, globalization, and workforce). Each of these councils is preparing to publish a regional index relevant to its own focus area. As a result of these new indices, as well as feedback from member states over the past three years, the *Southern Innovation Index* will undergo a significant

1. For this report, the South refers to members of Southern Growth Policies Board: Alabama, Arkansas, Georgira, Kentucky, Louisiana, Mississippi, Missouri, North Carolina, Oklahoma, Puerto Ricko, South Carolina, Tennessee, Virginia and West Virginia.

facelift after this report. It will reappear in a more concise format with fewer indicators. Many of the indicators that will be eliminated from this *Index* will subsequently be part of the *Globalization Index*, the *Workforce Index* or the *Community Index*. The Southern Technology Council is working on the revised *Innovation Index* at this time, and expects to release a new version in 2005.

Some of the indicators that appeared in previous versions of the *Southern Innovation Index* have been dropped from this version because of the lack of reliable data[2].

Good News, More Good News and then Bad News

So how is the South's investment portfolio doing? A comparison of the updated indicators with their 2002 report counterparts reveals significant trends.

- **Striking Improvement in Reaching Targets.** The South is well ahead of schedule in progressing to full participation in the innovation-based economy.

- **Strength in Core Technology Indicators.** If people outside — and within — the South still have a lingering concept of the South as being a technological backwater, they need to get over it. It just isn't true.

If the South had performed at the national average there would have been...

$10 billion more venture capital invested in new businesses in 2002.

$23 billion more invested in R&D by the South's companies in 2001.

- **Worrisome Investment Environment.** In both public and private sector investments, the South lacks the investment to become more of a leader in the innovation economy.

If the South were performing at the national average in several key categories, billions of additional dollars would be available for investment in the region's businesses and citizens. Our sub-par performance in two critical areas — venture capital and industrially-performed research — especially hampers the South's economic progress. Policymakers should address these two serious barriers to Southern economic leadership.

Striking Improvement in Reaching Targets

In the two years since the states set their targets, the South has attained about 70 percent of its target values, and 80 percent in critical technology indicators. Since targets were originally based on meeting the goals in ten years, this demonstrates a surprisingly rapid improvement (see Table 1).

The states as a group surpassed their targets in broadband access, which is now at 114 percent of the goals. The states are within a few percentage points of reaching targets in students per Internet computer, percentage of bachelor's degrees in science and engineering, and patents, and more than half way on all other core technology targets.

Strength in Core Technology Indicators

Not only is the South meeting its goals in the innovation economy, it is also doing well compared to national measures. The South's rate of progress in core indicators is almost twice the national average, about 16 percent growth versus 9 percent. The rate of patent growth is almost a quarter higher than the U.S. rate. Technology employment and the number of technology firms in the South are within one percent of the U.S. average. As seen in Table 2, the South has improved more than the U.S. in every core technology indicator. As a percent of the U.S. average, the South ranked routinely in the 90th percentile in these same indicators.

2. Indicators Dropped from the 2004 Index are:

1.3.A: Percentage of 25+ population participating in organized learning programs, 1.3.B: Rating of Southerners on importance of education to success, 2.1.A: Percentage of employment in "gazelle" firms, 2.1.B: New business starts.

This confirms data from other sources that describes a growing innovation economy in the South. For example, 20 percent of information technology workers live in the South (*Cyberstates 2003*). According to Ernst & Young, the South ranks third in number of biotechnology firms after San Francisco and New England.
The South also is performing well in two measures of critical Research &Development (R&D) investment. "Performed R&D" is a strong indicator of a region's intellectual capital. Those regions with higher R&D levels typically perform better economically than other regions. The National Science Foundation has tracked performed R&D in three areas: federally-performed R&D, university-performed R&D, and industrially-performed R&D. The updated data for R&D performed in the South shows the continuation of trends reported in the *2002 Invented Here* report in which the South does well in two of the three categories.

Federally-performed R&D in the South increased six-fold from 1970 to 2000, reaching $3.4 billion. Dramatic increases occurred in Georgia, Mississippi and North Carolina.

Federally-performed R&D refers to work done within a state by federal employees, usually in a federal laboratory. It does not include federally funded work performed by university or industry personnel.

Southern university-performed R&D increased nearly 1600 percent between 1972 and 2001, while the U.S. increased about 1300 percent . University-performed R&D represented a $6.1 billion direct infusion into the Southern economy in 2001 — about 19 percent of the nation's total.

Our share of this type of R&D declined slightly from 2000 to 2001, from 19 percent to 18.8 percent of the U.S. total. U.S. expenditures increased by almost $3

Table 1
Progress in Core Technology Indicators

Category	The South	The U.S.	Percent South Change[1]	Percent U.S. Change[1]	Percent of State Target[2]	South as Percent of U.S.[3]
Students per Internet-Computer	5.8	5.6	17.6%	17.5%	97.6%	96.8%
Percent Zip Codes With Broadband Access	85.8	88.0	29.6	17.3	114.6	97.6
Patents per 10,000 Businesses	62.0	137.0	15.8	12.3	80.7	45.2
Technology Employment as percent of Total Employment	7.6	8.9	NA	NA	80.5	85.5
Technology Firms as percent of Total Firms	4.5	5.9	NA	NA	66.6	75.9
Percent of Fourth Graders Proficient in Reading	27.0	29.0	4.8	0.0	68.9	91.8
Percent of Eighth Graders Proficient in Reading	27.0	30.0	6.9	0.0	69.5	91.0
Percent of Fourth Graders Proficient in Math	26.0	31.0	48.1	24.0	84.9	66.9
Percent of Eighth Graders Proficient in Math	22.0	31.0	20.0	19.2	56.4	71.5
Percent of Bachelor's Degrees in Science and Engineering	17.0	17.0	14.8	-1.7	91.9	100.0

1. Percent South Change and Percent U.S. Change result from comparison to data in 2002 report.
2. Average of Southern states' progress towards 10-year targets.
3. Southern average as percent of U.S. average.

Source: Compiled by Southern Technology Council

billion — a percentage gain of 8.8 percent. Policymakers must watch this indicator to make sure the decline does not continue in the future.

States that had slight increases in university R&D were Mississippi, Missouri and North Carolina. South Carolina was the real winner, increasing from .98 percent of the U.S. to 1.10 percent.

Worrisome Investment Environment

The updated indicators reveal a disturbing economic trend in the South — one that threatens to limit or derail the region's progress. The data shows that the South lags in one of the key elements of the innovation economy: investment. The South lags in investment from nearly every major source, both public and private.

Investment is the gas on which the innovation economy runs. Venture capital is a key ingredient in the commercialization of technology and the growth of entrepreneurial enterprises. Small business loans help entrepreneurs get to scale. Company investment in R&D creates new products, which generate wealth and jobs.

In the South, the gas just isn't there. In federal award programs such as Small Business Innovative Research (SBIR), Small Business Investment Company (SBIC),

and Small Business Administration (SBA) loans, the South's numbers increased, but not nearly as much as the U.S. average(See Table 2). The number of Southern SBIR awards increased seven percent from the last report, but the U.S. total increased almost 25 percent. The number of small business loans awarded to Southern companies jumped 32 percent, but this was half the national increase.

The same trend occurred in the venture capital indicator. This indicator is crucially important to the South, since new companies and industries must be financed to bolster the South's traditional industries such as agriculture, textiles, furniture and apparel.

Both the South and the U.S. experienced dramatic drops in venture capital during the implosion of the dot.com investment bubble.

The good news is that the South and the U.S. had nearly the same drop of 80 percent. The bad news is that because the South was well behind the nation at the outset, this drop hurts the South more.

Over the last 20 years, the South's share of the nation's venture capital increased by about 4.5 percentage points, far less than the region's growth in population and economic activity.

Table 2
Worrisome Investment Environment

Category	The South	The U.S.	Percent South Change[1]	Percent U.S. Change[1]	Percent State Target[2]	South as Percent of U.S.[3]
SBIR Awards per 10,000 Establishments	3.3	8.1	7.0%	24.6%	46.1%	40.6%
Number of Small Business Investment Company Awards	180.0	390.0	7.1	7.7	96.5	46.1
Number of Small Business Administration Loans	629.0	1345.0	31.3	63.0	95.0	46.7
Venture Capital Disbursements (in millions)	$1,908.0	$21,087.0	-79.9	-80.0	24.5	9.0

1. Percent South Change and Percent U.S. Change result from comparison to data in 2002 report.
2. Average of Southern states' progress towards 10-year targets.
3. Southern average as percent of U.S. average.

Source: Compiled by Southern Technology Council

Along with venture capital worries, the other critical component of an innovation economy is industrial R&D. Although federally-performed and university-performed R&D are important — and the South has done well here — industrial R&D is the most important R&D category. This R&D is by far the largest pot of money spent on R&D — about six times larger than the university amount and 11 times the federal amount (see Graph 1). In 2001, industry performed almost $200 billion worth of R&D, versus $33 billion for universities and $17 billion for federal institutions.

Also, since industrial R&D is generally closer to product commercialization, it delivers a more immediate economic boost than university or federal R&D investments.

Despite strengths in university and federal R&D, the South's share of industrial performed R&D dropped almost five percent more than the U.S. as a whole from 2000-2001. This represented a loss of $1 billion in R&D activity in the South, and *almost accounted for the $1 billion decline recorded at the national level.*
The South's share of the nation's industrially-performed R&D fell from 8.8 percent in 1963, to 8.64 percent in 2000, to 8.2 percent in 2001 (Note: NSF revised 2000 figures, so the numbers in the previous report do not match numbers in this report).

All Southern states' share decreased between 2000 and 2001 except Alabama, which increased from .41 percent to .46 percent; Oklahoma, from .23 percent to .27 percent; and Virginia, from 1.34 percent to 1.49 percent.

If the South were performing 20 percent of the industrial R&D — its share of the nation's economy — the South's companies would have invested $23 billion more in R&D in the South in 2001.

More Investment Bad News

The shortage of investment in the South is a long-term trend reflected in categories outside the *Index.* Additional indicators that support the need to focus on building investment capacity:

E-rate: Telecommunications Investment in Schools and Libraries
In 2001, the Southern Growth member-states received only 72 percent of the national average of E-rate funds. The federal E-rate program subsidizes telecommunication access for schools and libraries. If the Southern states were getting their average share of funds, an additional $400 million would be available to help the region's students and adults participate in the networked, innovation economy.

Slowing Capital Investment?
Capital investment in new and existing industry may show signs of slowing in the South. This can be difficult to track, since capital investment numbers are notoriously idiosyncratic. Little standardization exists in data collection and categories among the states, so reliable data comparisons are difficult.

To look at the major announcements according to *Site Selection* magazine, the South seems to be doing well, at least in the top 20 announcements in terms of dollars invested. A significant portion of these large investments in the South in the last few years have been automotive.

To gain some insight into long-term trends in capital investment, the STC staff analyzed the number of capital investments by Southern states, as announced by *Site Selection.* These numbers show a downward trend over the last 10 years. The South garnered 35 percent of the projects in the period from 1994-1996, but only 25 percent in 2001-2003(See Graph 1). Although more work needs to be done in this area, this trend could be a fraying of the economic development investment platform on which much of the economic success of the South has been based. While the recruitment of branch plants brought critically important jobs to the South for decades, this strategy had its limitations. It did not do much, for example, to foster headquarters operations or R&D facilities in the South. As the global economy has evolved, it has become increasingly difficult for Southern states to compete on low taxes, cheap land and low-cost labor.

Troubling Long Term Venture Capital Trends
As mentioned earlier, the updated data shows that the Southern decline in venture capital was about the same as the nation's recent rate of decline. Although this seems comforting to the South, it shouldn't be. The South needs to grow its venture capital at a faster rate than the country because we have historically had a disproportionately small share of the nation's venture

capital. Moreover, we desperately need these capital infusions to help replace declining industries.

The long-term trend for venture capital in the South is cause for far more concern. Although the South's share of the U.S. total has increased in the last 20 years, it has lagged behind its growth of population and economic clout. Over the last 20 years, the average share of Southern venture capital is nine percent, less than half of the South's present share of the economy, which is 20 percent (See Graph 2). If the South had received its share of venture capital according to its percent of the economy, there would have been more than $10 billion additional dollars in 2002 to spur the growth of Southern companies.

A Call to Action by the Southern Technology Council

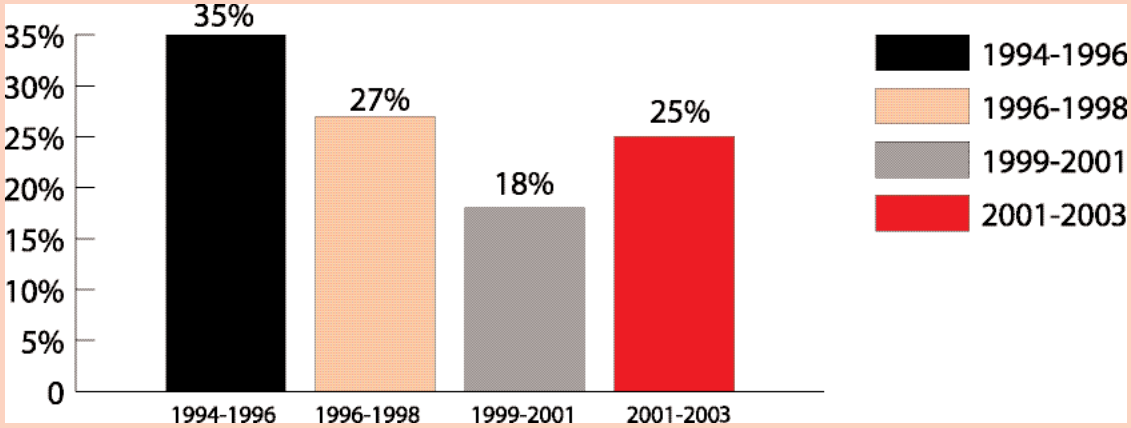
The release of this update to the *Southern Innovation Index* is a cause for both celebration and concern. The South can justifiably be proud of its performance in the areas of technology and innovation. By many important indicators, the South has made significant and sustained progress. However, Southern leaders should be deeply concerned about the findings of this report in regard to investment in the South, particularly in the areas of venture capital and industrial R&D. Addressing these shortages should be one of economic development policymakers' core objectives. The Southern Technology Council is prepared to move forward on both fronts.

First, the STC is surveying industrial R&D managers throughout the nation for insight into factors affecting R&D facility location decisions. The results of this unique look into the minds of R&D decisionmakers will be released in a report later this fall. The report will serve as the foundation for the development of viable strategies to build private R&D capacity in the South.

Recently, the STC has also laid the groundwork for a new venture capital initiative. A Southern Task Force on Venture Capital is being organized, and an extensive research plan is being developed. Again, the STC intends to use this research to create strategies that will revolutionize the South's standing in the venture capital community.

Graph 1

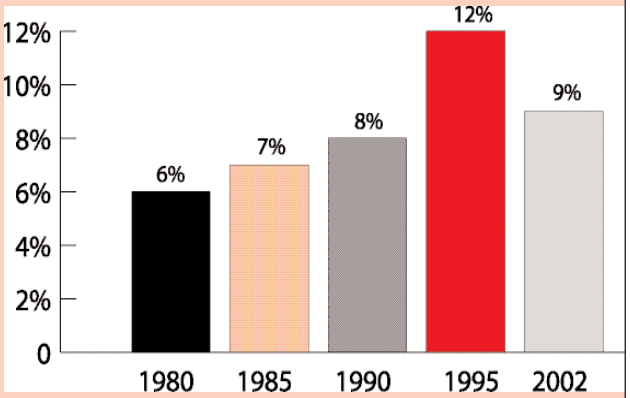
Capital Investment Projects in the South as Percent of U.S., 1994-2003



Source: Calculated from data from *Site Selection* Magazine. Number of projects as percentage of total U.S. projects.

Graph 2

South's share of U.S. Venture Capital



Source: *National Venture Capital Association 2003 Yearbook*

The intent of the STC is to deliver clear, practical and pragmatic strategies to close the investment gaps identified in this report. The *Invented Here* initiative continues to be an important vehicle for building the South's innovation economy.

Table 3

University-Performed R&D - Selected Years (In Thousands)

State	1972	1980	1990	2000	2001	Percent of U.S. in 1972	Percent of U.S. in 2000	Percent of U.S. in 2001
Alabama	22,116	60,534	253,124	428,122	445,299	0.84%	1.42%	1.36%
Arkansas	11,333	30,283	51,016	130,894	140,741	0.43	0.44	0.43
Georgia	51,677	140,315	459,603	926,749	988,883	1.96	3.08	3.02
Kentucky	14,236	38,217	95,094	274,238	296,895	0.54	0.91	0.91
Louisiana	30,267	74,192	214,025	399,411	432,356	1.15	1.33	1.32
Mississippi	16,646	40,334	92,300	217,064	242,133	0.63	0.72	0.74
Missouri	78,493	113,425	291,383	614,101	678,460	2.98	2.04	2.07
North Carolina	64,119	133,628	455,471	1,040,017	1,137,279	2.44	3.46	3.48
Oklahoma	19,247	48,150	132,009	252,419	255,217	0.73	0.84	0.78
Puerto Rico	10,424	18,131	44,071	74,529	63,755	0.40	0.25	0.19
South Carolina	9,792	34,346	140,556	294,184	361,404	0.37	0.98	1.10
Tennessee	29,216	76,437	226,482	405,013	423,264	1.11	1.35	1.29
Virginia	30,470	86,847	337,629	587,718	610,717	1.16	1.96	1.87
West Virginia	8,957	17,621	48,174	73,420	79,076	0.34	0.24	0.24
South Total						15.09	19.02	18.81

Source: National Science Foundation.

Table 4

Federally-Performed R&D - Selected Years (In Thousands)

State	1970	1980	1990	1999	2000	Percent of U.S. in 1970	Percent of U.S. in 1999	Percent of U.S. in 2000
Alabama	176,435	270,868	626,896	771,923	664,981	4.73%	4.42%	3.88%
Arkansas	1,072	14,213	52,198	46,122	45,489	0.03	0.26	0.27
Georgia	21,943	63,800	112,935	278,552	273,713	0.59	1.60	1.60
Kentucky	9,237	18,546	51,455	9,146	7,500	0.25	0.05	0.04
Louisiana	19,010	32,445	38,403	58,976	99,196	0.51	0.34	0.58
Mississippi	16,918	66,688	143,837	196,245	186,799	0.45	1.12	1.09
Missouri	15,900	30,111	50,877	48,097	43,851	0.42	0.27	0.26
North Carolina	12,963	81,243	74,662	230,780	262,003	0.34	1.32	1.53
Oklahoma	12,164	54,177	46,239	45,912	58,619	0.33	0.26	0.34
Puerto Rico	NA	NA	NA	8,548	9,125	NA	0.05	0.05
South Carolina	2,739	7,962	18,560	45,050	45,754	0.07	0.26	0.27
Tennessee	9,233	64,700	234,661	64,783	88,947	0.25	0.37	0.52
Virginia	218,282	470,811	1,024,647	1,793,639	1,449,209	5.85	10.28	8.45
West Virginia	5,818	104,862	60,082	116,330	102,958	0.16	0.67	0.60
South Total						13.99	21.29	19.46

Source: National Science Foundation.

Table 5

Industrially-Performed R&D - Selected Years (In Millions)

State	1963	1972	1981	1987	1993	2000*	2001	Percent of U.S. in 1963	Percent of U.S. in 2000*	Percent of U.S. in 2001
Alabama	116	81	100	1,523	557	821	905	0.90%	0.41%	0.46%
Arkansas	2	5	52	129	179	400	254	0.02	0.20	0.13
Georgia	61	91	220	958	792	2,159	1,912	0.48	1.08	0.96
Kentucky	22	61	170	238	282	762	636	0.17	0.38	0.32
Louisiana	131	66	158	128	106	364	316	1.03	0.18	0.16
Mississippi	2	4	NA	42	51	242	219	0.02	0.12	0.11
Missouri	304	544	1,137	1,823	1,339	1,978	1,792	2.41	0.99	0.90
North Carolina	71	143	546	1,666	1,886	4,328	4,138	0.56	2.17	2.08
Oklahoma	53	82	339	367	299	463	543	0.41	0.23	0.27
South Carolina	28	58	NA	500	461	1,059	921	0.22	0.53	0.46
Tennessee	139	181	NA	621	788	1,644	1,503	1.10	0.82	0.76
Virginia	93	131	539	1,284	1,046	2,683	2,957	0.74	1.34	1.49
West Virginia	89	NA	NA	83	100	329	211	0.70	0.16	0.11
South Total								8.80	8.64	8.21

Source: National Science Foundation

* NSF has recalculated 2000 figures since the last *Southern Innovation Index*

Because current data was not available at the time of production, the following indicators were not updated for the 2004 report.

1.1.A Percentage of math teachers with major or minor in assigned field, grades 9-12.

1.1.B Percentage of science teachers with major or minor in assigned field, grades 9-12.

1.3.D Percentage of population scoring at level 1 on National Adult Literacy Survey.

1.4.B Percentage of civilian workforce with a recent bachelor's degree in science or engineering.

1.5.A Percentage of African-American population 25 years old or older with a high school diploma or higher.

1.5.B Percentage of Hispanic population 25 years old or older with a high school diploma or higher.

1.5.C Percentage of Native-American population 25 years old or older with a high school diploma or higher.

1.5.D Percentage of African-American population 25 years old or older with a bachelor's degree or higher.

1.5.E Percentage of Hispanic population 25 years old or older with a high school diploma or higher.

1.5.F Percentage of Native American population 25 years old or older with a high school diploma or higher.

1.6.B Percentage of households with computers.

1.6.C Percentage of households with Internet access.

2.1.F Number of Inc. Magazine's best 500 companies per 10,000 business establishments.

2.2.D Percentage of recent science and engineering Ph.D's in the workforce.

2.2.F Number of patent attorneys and agents for 10,000 business establishments.

2.3.D Number of Small Business Development Centers, per 10,000 establishments.

2.3.E Minority-owned firms as a percentage of total businesses.

2.3.F Women-owned firms as a percentage of total businesses.

Goal 1

Create a culture of learning throughout the South, in which the acquisition, creation and application of knowledge is viewed as central to our health, happiness and prosperity.

Objective 1.1: Make P-12 education efficient and effective in educating our children.

Objective 1.2: Make post-secondary education effective in continually raising the level of educational achievement in the South.

Objective 1.3: Elevate the value placed on education and significantly increase the percentage of Southerners actively engaged in the process of lifelong learning.

Objective 1.4: Overcome the skill shortages in the following fields: science, engineering, information technology and math.

Objective 1.5: Educate those left behind in the knowledge economy, targeting minorities and immigrants and their children.

Objective 1.6: Ensure basic competency in the tools of the Information Age.

Goal 2

Encourage and support innovation and entrepreneurship.

Objective 2.1: Infuse an entrepreneurial culture throughout the South.

Objective 2.2: Increase significantly public and private R&D in the South.

Objective 2.3: Ensure access to capital and technical and management assistance at all stages of business development, paying particular attention to underserved groups.

Objective 2.4: Take advantage of the growing commercial and intellectual potential in the global community.

Goal 1: Create a culture of learning throughout the South, in which the acquisition, creation and application of knowledge is viewed as central to our health, happiness and prosperity.

In order to benchmark innovation within Alabama, the Alabama Department of Economic and Community Affairs (ADECA), in partnership with the Center for Innovation, Competitiveness and Entrepreneurship at the University of Alabama in Huntsville (UAH), has developed the *Alabama Innovation Index* tailored specifically to the state's economy.

Designed to complement the *Southern Innovation Index*, Alabama's index uses indicators of innovation such as High Tech Employment, Research and Development (R&D) Expenditures, University Patent Royalties, Small Business Innovative Research (SBIR) Awards, Creation of Tech Firms, Value Added in Manufacturing, Scientists and Engineers in Workforce, Venture Capital Invested, Fast Growth Firms and Patents Issued. Data was collected for 1998 through 2001. This index indicates the trends of innovation within Alabama, establishes a benchmark to gauge future developments, and will serve as an aid in setting future policy priorities.

Alabama is working to strengthen emerging and growth industries within the state. Two indicators of Alabama's statewide research capacity, R&D expenditures as a percentage of Gross State Product (GSP) and SBIR Awards as a percentage of GSP, rank Alabama number one among its four neighboring states. Alabama also ranks near the top of the neighboring states in educating and providing jobs for a technology workforce.

Goal 2: Encourage and support innovation and entrepreneurship.

Alabama has a strong network of 17 business incubators throughout the state, some of which are nationally recognized. Business incubators nurture young companies during the early start-up years when they are most vulnerable to failure. The incubators provide management guidance, technical support, affordable and expandable rental space, and the contacts necessary to get a new business off the ground. This environment helps to produce financially viable and freestanding businesses that create jobs, diversify and strengthen the economy, and commercialize new and innovative technologies.

Governor Bob Riley recently signed an agreement with the U.S. Department of Energy's (DOE) Oak Ridge Operations Office that will make advanced technologies available for use by Alabama industry. The agreement promotes the transfer of Oak Ridge-developed technologies to support industrial development, education/workforce development, environmental technology, transportation, energy efficiency renewable energy and Homeland Security in Alabama. "This agreement will allow us to leverage valuable resources and facilitate our initiatives for economic and industrial growth in the state," Riley stated. "The transfer of new technologies to Alabama industry can serve as a catalyst for innovation, job growth and enhanced productivity and competitiveness."

In the state of Alabama, research continues to grow through the combined efforts of industry, private research centers, educational institutions and government. The state's major research institutions and other research centers play a significant role in the development and application of new technologies that lead to a more robust economy. Alabama's reputation as a leader in biomedical, space and defense research and technology is expanding to include transportation, automotive and the marine sciences. Governor Riley, in an address to the Alabama legislature, emphasized the importance of continued research expansion in the state. "Over the next 10 years we cannot continue with an economy based on producing commodities," Riley said. "State government work must work with universities to base the economy on research."

The Alabama Experimental Program to Simulate Competitive Research (EPSCoR) continues to improve the university research capabilities and infrastructure of Alabama. The EPSCoR program is a group of competitive, merit-based grants from the National Science Foundation, the National Aeronautics and Space Administration, the Department of Energy, the Department of Defense, and the Environmental Protection Agency to the seven research universities in the state. The Alabama EPSCoR promotes collaboration, provides opportunities for research and development, and develops linkages among the research institutions and other organizations as well as the state's private sector, including technology-based small businesses, to enhance science and engineering research activity and competitiveness.

Further working to advance the state's investment in cutting-edge research is the Alabama Research Alliance (ARA), a partnership among Alabama's research universities, the business community and state government. The mission of the ARA is to foster economic development in Alabama by investing in existing and new research initiatives at Alabama's research universities. The research alliance focuses on investing in and promoting research in areas including, but not limited to: space, science, technology and defense; automotive manufacturing and production design; agriculture; biomedicine and cancer research; and aviation computer electronics.

Through these varied efforts, Alabama is working to ensure that the state continues to be a leader in job creation and expansion and that Alabama continues to advance as a high-tech economic center prepared to compete in the ever-changing global economy.

Goal 1: Create a culture of learning throughout the South, in which the acquisition, creation and application of knowledge is viewed as central to our health, happiness and prosperity.

Arkansans are envisioning learning in a new light. Education has been the most prominent public policy issue since the Arkansas Supreme Court declared the public school system unconstitutionally ineffective and inefficient in 2002. Every branch of state government has focused its priorities on education. The state Supreme Court released its jurisdiction in the case in June 2004.

The Arkansas Blue Ribbon Commission on Public Education recommended establishing regional high schools, increasing teacher salaries, increasing school facility funding, emphasizing individual student accountability, and increasing parental participation. Governor Mike Huckabee's Blue Ribbon Committee on Higher Education issued its report on the state's system of colleges and universities in 2004. Recommended improvements include clarification of institutional missions to avoid duplication and expansion of statewide inter-collegiate articulation of courses for student mobility. The report also recommended placing a moratorium on any new college/university campus sites, and the requirement that 15 to 20 percent of existing college/university base funding become dependent upon meeting new student outcome performance criteria.

Legislatively, the Arkansas General Assembly had two regular sessions and two special sessions that resulted in the establishment and funding of several state education priorities. Legislation established that the Joint Committee on Educational Adequacy would be responsible for recommending a system of public education across the state. Ideally this will determine whether an adequate education is being substantially afforded to all of Arkansas' school children. The Governor's agenda for the 2005 legislative session will focus on "The Three H's" of Higher Education, Healthcare and rural Highway improvements.

Private sector entities have been engaged in the education effort as well. The Winthrop Rockefeller Foundation released *Tax Options for Arkansas: Funding Education After the Lake View Case* to help policy makers assess the current tax profile of Arkansas and examine funding options for public education. The Foundation also approved a proposal to transition the Innovative Middle School Science Teaching Project from the Arkansas Science & Technology Authority to the Arkansas Community Foundation. This project would enable the Authority to develop a plan and provide the technical assistance needed to transition its project to Arkansas Community Foundation affiliates.

Goal 2: Encourage and support innovation and entrepreneurship.

To encourage innovation and entrepreneurship in Arkansas, numerous initiatives have been taken. The fourth Arkansas Venture Capital Forum was held in Little Rock in April 2004. The event was a success with more than 275 entrepreneurs, investors and venture capital firms in attendance. Organizers are planning several regional events over the coming year to discuss private equity capital formation with community leaders.

The annual Student Business Plan competition attracted more than 750 students to the event. The Arkansas competition offers the fourth largest cash awards pool in America.

The state's economic development incentives were overhauled to include several new incentives for entrepreneurial companies. The overhaul was undertaken as a result of the Report of the Task Force for the Creation of Knowledge-based Jobs. The task force, created by the Arkansas Department of Economic Development, concluded that it was more important to build and sustain a system of education, research, entrepreneurship and risk capital that supports and assists knowledge-based companies than it is to focus only on recruiting jobs.

The University of Arkansas for Medical Sciences completed its biomedical incubator called BioVentures, and it is now working with entrepreneurial companies based on intellectual property spinning out of that institution. The University of Arkansas at Fayetteville is opening the Arkansas Research & Technology Park to assist companies access the research capabilities of the University.

The Venture Capital Act of 2001 allows the Arkansas Development Finance Authority to support investments in venture capital firms that actively look for deals in Arkansas. The Arkansas Capital Corporation created the Commerce Capital Development Company under new state legislation authorizing a 33 percent state tax credit for investors who financially support Arkansas ventures. The tax credit is transferable and has been the impetus for a statewide angel group to form with a common pool of investment funds. Technology-oriented entrepreneurs in Arkansas have formed a networking organization called Techprenuer to assist with entrepreneurial endeavors.

Accelerate Arkansas, a statewide volunteer organization with support from the Winthrop Rockefeller Foundation, has retained the Milken Institute to assist the state of Arkansas in developing a road map and milestones for technology-based economic development. This statewide initiative grew out of planning for the Arkansas Venture Capital Forum and the work of the Task Force for the Creation of Knowledge-based Jobs. Arkansas was also selected as one of eight states to participate in a new National Governors' Association and Lumina Foundation project. The Arkansas team is led by the Governor's staff, the Arkansas Association of Two-Year Colleges and the Good Faith Fund. The team's objective is to develop new state policies, realign existing programs, or secure new outside funding to promote working adult access to postsecondary education and industry skills certificates.

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The Center for Behavioral Neuroscience (CBN), one of 11 National Science Foundation (NSF) Science and Technology Centers nationwide, has received a renewal grant of $18 million. With initial funding of $20 million, the Center has developed a consortium of 90 researchers from eight Atlanta colleges and universities. The Center focuses on examining the neural mechanisms underlying complex social behaviors essential for species survival, including fear, affiliation, aggression and reproductive behaviors. CBN complements its research program with extensive graduate and post-doctoral education and training program, as well as outreach programs to students, especially under-represented minorities, starting in kindergarten.

During its second phase of funding the Center will put increasing emphasis on technology transfer. Among the projects being examined for their commercial potential is a drug, originally developed for treating tuberculosis, as a therapy that helps acrophobics overcome their fear of heights. Another project involves investigation into the antimicrobial properties of ink squirted by sea slugs to deter predators.

Goal 2: Encourage and support innovation and entrepreneurship.

The Georgia Research Alliance (GRA) has launched a new program to encourage university-industry research collaborations and ultimately increase the amount of industry research in the state. The GRA Innovation Fund fosters long-term partnerships between companies throughout Georgia and the state's research universities. Each project must lead to the development of new technologies for growing the state's economy.

Nearly $2.7 million in awards from the Alliance, matched with $3.4 million from the 38 participating companies, accounts for awards totaling over $6 million. Projects focus on a wide array of technologies in advanced communications and the biosciences, including new broadband telecommunications devices, manufacturing HIV vaccines, treatments for Parkinson's disease, very fast and accurate speech analysis software, and new forms of pest management in agriculture.

Both emerging and well-established companies in many parts of the state are program partners. Some example projects include:

- Researchers at Georgia State University are working with C.R. Bard in Covington, Georgia to validate the effectiveness of the company's urinary catheter impregnated with silver as an antimicrobial to reduce patient hospital stays.
- In collaboration with the University of Georgia New Media Institute in Athens, an array of computer, software and computer-based training companies are working together to complete the research and prototype development needed to determine effective operations in the growing markets for wireless communication.
- Georgia Tech is partnering with King and Prince Seafood in Brunswick, Georgia to identify, track and control solids concentration in the company's wastewater system, leading to reduced raw materials and waste treatment costs.
- GeneRx+ is collaborating with researchers at Emory University to determine where fusion proteins have potential as clinical anti-inflammatory agents for treatment of diseases of the lung.

Another major initiative in Georgia is VentureLab. VentureLab is a joint program of the Georgia Research Alliance and the Advanced Technology Development Center. It offers a suite of services that helps universities identify laboratory discoveries with commercial potential and guides faculty through the process of advancing their ideas toward company formation. To date, Georgia Tech, the University of Georgia, Georgia State University and the Medical College of Georgia manage VentureLab programs. Some 150 university research discoveries previously not recognized as having commercial potential have been uncovered. Further analysis of these discoveries, coupled with funding and management assistance from VentureLab, has led to the formation of seven new companies.

Orthonics is an example of a VentureLab company that is moving forward rapidly. The company grew out of the research of Dr. Barbara Boyan, Georgia Research Alliance Eminent Scholar, and Price Gilbert, Jr. Chair in Tissue Engineering at Georgia Tech. The company is developing new biomaterials for spinal disc repair and regeneration, and in April 2004 received its first private sector funding to match the company's grant from VentureLab. The startup is housed in the new biosciences incubator at Georgia Tech.

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Kentucky has long emphasized adult education. In a record-breaking 2003, approximately 110,000 Kentuckians enrolled in adult education, family literacy, corrections education, workplace education and English as a Second Language classes. This progress resulted from a strong partnership between Kentucky Adult Education and the Council on Postsecondary Education.

The Kentucky Virtual Adult Education website allows adults to learn any place, any time, at their convenience. The first of its kind in the nation, Kentucky Virtual Adult Education was recognized in September 2003 by the National Association of State Chief Information Officers (NASCIO) for its "Innovative Use of Technology."

Kentucky Adult Education is improving literacy in two generations simultaneously through family literacy programs, which address educational needs of parents and young children. Kentucky is one of two states in the nation to offer family literacy programs in every county.

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Governor Ernie Fletcher announced in July 2004 his focus on advanced farming such as bio-engineered pharmaceuticals. Kentucky is in the process of modifying its business recruitment systems to take into account the quality of the jobs created and ancillary community benefits. To foster these changes, Governor Fletcher has created a Life Sciences/Biosciences Consortium — a group of government, industry, and education leaders charged with creating a strategy for attracting high-tech entrepreneurs in this industry.

Governor Fletcher has also made changes in the state's Office for the New Economy. The Office for the New Economy developed and implemented the "state-wide New Economy strategic plan." Governor Fletcher renamed it the Department of Innovation and Commercialization for the Knowledge Based Economy to better reflect Kentucky's commitment to attract high-tech jobs.

Kentucky has numerous existing and new statewide programs that support innovation and entrepreneurship. The Kentucky High-Tech Construction Pool is used for projects with a special emphasis on the creation of high-technology jobs and knowledge-based companies.

Four universities (University of Kentucky, University of Louisville, University of Cincinnati and Wright State University) have joined together in a collaborative program, the Ohio Valley Affiliates for Life Sciences (OVALS), that showcases each of the institutions' strengths while positioning the Ohio Valley as a research and development driver for the region. Together, these four research universities attract and allocate nearly $500 million per year for basic and applied research. Much of the research is focused in the life sciences.

For individual entrepreneurs and scientists, Kentucky has developed a system of Innovation and Commercialization Centers. The centers assist entrepreneurs and scientists in commercializing technologies that demonstrate market potential by providing business expertise, tools and best practices to develop new companies.

The Kentucky Science and Engineering Foundation (KSEF) also explores homegrown concepts likely to become viable products and breed high-technology companies. KSEF assists Kentucky researchers in securing federal grants by giving them an opportunity to investigate untested hypotheses. Another program, the Information Technology Resource Network (iTRN), provides information technology resource and application development support to incubator companies and traditional firms.

Several tax credits and funds also support innovation and research in Kentucky including the R&D Voucher Fund, a fund that enables small- and medium-sized Kentucky-based firms to begin R&D projects in partnership with university researchers. Similarly, the Rural Innovation Fund enables small, rural-based Kentucky firms to take on research and development work. Finally, the Research Facilities Tax Credit provides a five percent tax credit for the costs of constructing, remodeling and equipping research facilities.

The State has also begun a $700 million program for endowed chairs and professorships at the state's public universities. The Bucks for Brains program, an Endowment Match Program, combines public monies and extramural funding to support research at the University of Kentucky and the University of Louisville and to strengthen key programs at the comprehensive universities. This program also has helped the universities in their efforts to compete for federal research funds.

The state has also created the Kentucky Science and Engineering Foundation to increase Kentucky's capacity to become a leader in competitive research by making investment in peer-reviewed science and engineering research. From inception through June 2003, there have been 336 investments in nine universities, 67 companies, and 32 counties.

The state has established the Institute for New Economy (iNET) at Northern Kentucky University. iNET assists entrepreneurs to translate research and innovation into commercial success. It links technology companies with intellectual, technological, human and other resources within the university.

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During the 2004 regular legislative session, Governor Kathleen Blanco established a firm commitment to K-12 education by providing $52 million in continued funding for the Accountability Program. This funding will ensure that Louisiana's number-one ranked school accountability program, which focuses on student achievement and the belief that every child can learn, will continue its record of success. Additionally, the Governor's budget provided $49 million in continued funding to maintain Louisiana's nationally recognized LA 4-Early Childhood Education program. LA 4 targets at-risk-four-year-olds giving them access to quality pre-Kindergarten programs in many of the state's school districts. Both of these investments will yield continued results in student achievement.

Another example of Louisiana's commitment to the learning enterprise is the work conducted by the Consortium for Education, Research and Technology of North Louisiana (CERT). CERT serves as the intermediary that links Louisiana's five post-secondary systems with industry to support workforce development, technology transfer, education and economic development for the 22-parish region. Members include two historically black institutions, technical and community colleges, a medical school and both state and private colleges.

The North Louisiana Partnership for Innovation is a CERT initiative funded by the National Science Foundation. Now in its second year, the program is designed to aggressively seek out technology opportunities from the region's industry, academe and government.

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Governor Blanco proposed and succeeded in getting legislation passed that will eliminate more than $1 billion dollars of taxes on business over the next eight years by removing the corporate franchise tax on debt, and the state sales tax on business machinery and equipment. Eliminating these taxes with a phase-in strategy is an example of Louisiana's commitment to supporting entrepreneurs. Other legislation passed in 2004 to encourage innovation and entrepreneurship includes the creation of a legislative subcommittee on Science and Technology and the Louisiana Broadband Advisory Council.

Initiatives supporting innovation are based on Louisiana's unique geographic location, culture, research competencies and seed industry-clusters. For instance, the state's commitment to multi-year funding of specific life sciences and information technology initiatives in higher education and research are showing results. Funded initiatives in life sciences include three state-of-the-art wet lab incubator/accelerators, located in Shreveport, Baton Rouge and New Orleans. Pennington Bio-Medical Research Center, a facility of Louisiana State University devoted to research in nutrition, genetics, obesity and diabetes. The Louisiana Cancer Research Center is currently under construction.

The Louisiana Gene Therapy Research Consortium, which is comprised of both Louisiana State University Health Sciences Centers and Tulane Health Sciences Center, has successfully recruited top researchers and leveraged $35 million in federal grants, with another $58 million pending. The grants represent a 600 percent Return on Investment from the State's initial funding. The Consortium now has 24 researchers and 136 employees working on cell and gene therapy interventions for asthma, cystic fibrosis, cancer, spinal cord repair, kidney and liver diseases, obesity, alcoholism, diabetes and brittle bone disease in children.

Other investments in higher education are also yielding results. Louisiana Tech, for example, used funding to create the Center for Entrepreneurship and Information Technology, which has established a state-of-the-art laboratory and is advancing entrepreneurial research, education and technology transfer. Focus areas include grid computing, collaborative environments, creative arts and technology and material science. University of Louisiana -Lafayette's Center for Business and Information Technologies (CBIT) supports the university's economic development agenda by conducting research, developing software and creating commercializable products and services.

Advanced materials is another area receiving state support with exceptional results. For instance, the Louisiana Accelerator Center at University of Louisiana – Lafayette emphasizes biomaterials analysis and high energy-focused ion beam development with tools not available anywhere else in the country. In large-scale manufacturing, the state's National Center of Advanced Manufacturing (NCAM) houses the world's most sophisticated carbon fiber replacement unit. NCAM combines education, research and manufacturing to provide leadership in technology.

This past year funding was provided for planning and constructing the Acadiana Technology Immersion Center. Given Louisiana's unique geography and natural resources, this center will support basic and applied research and development that will benefit the offshore oil and environmental technology industries.

With this project, Louisiana continues to build on our strengths and, as directed by Vision 2020, reaches into the future. Louisiana is uniquely positioned in the world to become a powerhouse in Environmental Technology (ET). In addition to a ready and able pool of researchers in both private industry and our universities, we have a living laboratory in our wetlands and our industries.

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By year-end 2002, more than 6,000 computers had been successfully placed in Mississippi K-12 classrooms. Mississippi is the first state in the nation with an Internet accessible computer in every classroom.

Several other education improvement initiatives are well underway: the Blueprint Mississippi initiative, a partnership of Mississippi business and education to improve economic development in the state; the McCoy Plan, a proposal introduced by Mississippi Rep. Billy McCoy to utilize Mississippi's universities and community colleges as catalysts for economic development; and the Mississippi Education Involvement Initiative, an on-line inventory of state-wide educational resources and success stories. Recommendations related to each of these separate initiatives will be incorporated in a comprehensive long range planning process by the end of 2004. In particular, early childhood education has surfaced as a priority to support and enhance critical pre-birth to age five brain development processes that lead to permanent neuron structure and adult learning capacity.

Mississippi has restarted its participation in the U.S. Academic Decathlon. This year-long program of study for high school students culminates in a statewide competition to select one team to represent Mississippi at the national competition. Six schools sponsored teams in 2003, and many schools are lining up to participate for the 2004-05 school year.

Additionally, the John C. Stennis Space Center Strategic Plan includes education within two of its three broad goals. The Stennis Space Center is working to enhance teacher preparation, student test scores, and recently announced plans to open an education and science center in 2006. The 60,000 square foot educational and entertainment attraction called *Infinity* will feature displays and events highlighting science, math and technology applications. Agencies and private companies from Stennis and throughout Mississippi will host exhibits and programs.

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The 2004 Mississippi Innovation Index was released in May. The overall index value is up 24.6 percent from the baselines established in 2002. The *Index* focuses on eight statewide innovation goals and stimulates dialogue among policy makers about ways to improve performance throughout the technology life cycle including basic research, commercialization, business start-up, technical assistance for industry, and development of human capital and private investment capital.

The Mississippi Technology Alliance partners with Mississippi universities to sponsor meetings and conferences which educate faculty and staff about the commercialization process, and connect investment capital professionals in contact with Mississippi's technology businesses. In 2003, individuals participating in these events represented more than $1 billion dollars in private investment funds. A statewide intellectual property tradeshow is scheduled in September 2004; the event will showcase Mississippi's university-related technologies and companies.

Cluster development continues for the Communications and Information Technology (CIT), Polymers, Forest Products and Furniture, and Remote Sensing/Geomatics clusters. Regional cluster-building efforts also target additional industries and work with these statewide clusters.

Pointe Innovation magazine tells the technology, research and community development success stories that are occurring in Mississippi. The magazine received the Southern Economic Development Council award for excellence in its first year. Supported by advertising dollars, *Pointe Innovation* is distributed quarterly to more than 30,000 businesses, government and academic organizations.

Business incubators targeting technology-intensive companies are flourishing throughout the state. In Northeast Mississippi the Golden Triangle Enterprise Center (near Mississippi State University) is at full occupancy and is adding space. The Mississippi Technology Alliance Innovation Center in Jackson Mississippi (near Jackson State University) has had phenomenal success, reaching 75 percent occupancy in just two years with companies employing more than 100 people in Central Mississippi. The Mississippi Enterprise for Technology incubator at Stennis Space Center is at full occupancy with remote sensing/geomatics companies and will be expanding to the nearby Stennis Technology Park. Plans are underway for additional facilities in Hattiesburg, near the University of Southern Mississippi, and Oxford, near the University of Mississippi.

At Stennis Space Center, the state's technology transfer building (in which the Mississippi Enterprise for Technology is located) was recently designated a Geospatial Center of Excellence by the 2004 Mississippi Legislature in recognition of the activities occurring there among private companies, universities, federal agencies and commercialization non-profits all related to remote sensing, geomatic, geospatial and related technologies.

Groundbreaking ceremonies for the Stennis Technology Park were held in May 2004. The park will provide up to 80,000 square feet of prime office space near Stennis Space Center, and adjacent to the Stennis International Airport. The first 20,000 square foot building is expected to be available in the Fall 2004.

The Mississippi Federal and State Technology Partnership (MS FAST) program continues to provide support and assistance to businesses participating in the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) program.

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Governor Bob Holden has announced a student loan forgiveness program aimed at keeping Missouri's best and brightest math and science students in Missouri following graduation. The Missouri Advantage Repayment Incentive Option (MARIO) provides up to $10,000 in student loan forgiveness for college students who graduate with a math or science degree and go to work for a Missouri life science related company. This is the first step in Holden's Jobs Now plan, which is designed to stimulate economic growth and create jobs in Missouri.

Governor Holden signed the *Jobs Now* legislation that gives the Missouri Development Finance Board (the state's development finance agency) the power to invest general revenues in infrastructure projects that have the promise of creating jobs. This is the first authorization of state money being used directly on local projects for economic development purposes. Previously, only tax incentives and non-state funds were available for that purpose. The state money funding these infrastructure projects was allocated from savings achieved in eliminating or capping several tax credit program outlays.

The *Jobs Now* legislation also created Enhanced Enterprise Zones that extend and expand the current EZ act, which was expiring. In addition, the legislation allocated $15 million dollars to retrain workers for technology skill upgrades by their employer. A company must have maintained at least 100 employees during the two years prior to being in the program. A company also has to make a capital investment in long-term assets at the project location, such as buildings or equipment, in an amount of at least $1 million to be eligible for retraining assistance.

In 2003, the Department of Economic Development supported the creation of a strategic plan, including a series of benchmarks. The plan, *A Blueprint for Prosperity and Jobs*, was the culmination of efforts beginning with Governor Holden's Economic Prosperity Summit in 2001. The report urges the state "to focus on strengthening the foundation of the new economy. And this approach requires a new strategic focus and new set of tools." The report addresses the environment for education and workforce development within the state and says:

Missouri must invest in its people and enhance opportunities for its people to invest in themselves, starting with quality K-12 education and on up the line through both vocation programs and Ph.D. programs, as well as lifelong opportunities for skill improvement.

The report urges further investment in education and says that all education systems must work together to be more responsive to the needs of the business community. It also promotes quality of life as a means of attracting and keeping knowledge workers "who drive the new economy to the benefit of all Missouri."

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Missouri had a sizable presence at the BIO 2004 Annual International Convention, the world's largest biotechnology event. Missouri hosted a pavilion, demonstrating how the Show-Me State is "Guiding Discovery" in the biosciences. Gov. Holden has designated the biosciences as one of three target industries key to the state's future economic success, along with advanced manufacturing and information technology. The biosciences account for about $23 billion or 13 percent of the state's total economy. Through the first half of 2003, there were approximately 2,000 life science companies in Missouri that employed more than six percent of the state's total workforce.

Missouri has an initiative that divides the state into life science research districts, with each district containing one of the state's public colleges or universities. The program authorizes the collection of taxes that are returned to the college or university within the district for life science infrastructure or support programs.

The first priority of the previously mentioned *Blueprint* report is *Build a 21st Century Economy*. The report addresses the needs for investment in innovation:

Missouri must be committed to the creation of new ideas and technologies and encourage their application in business. New technologies and processes must be infused into all industries, in both new and existing businesses.

Furthermore, it identifies the private sector as the lead in the category, but says the state must play a "vital supporting role."

The report benchmarks a number of technology indicators such as engineering degrees, pool of scientists and engineers, and proportion of high tech workers. Citing that the state does not invest enough in R&D, it suggests benchmarks such as R&D dollars per $1,000 gross state product, venture capital, and number of patents.

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In 2002, Governor Michael Easley's Education First Task Force released its education road map, *Finish the Job: Building a System of Superior Schools*. This report highlights North Carolina's move toward a knowledge-based economy and stresses the importance of building a skilled workforce to realize the state's goals of continuing to attract industry and good jobs, strengthening communities, and enhancing the quality of life of its citizens. The report outlines six strategies for achieving these goals: intensify the focus on reading, ensure a high-quality and stable teacher corps, develop superior leaders for superior schools, reform high schools, strengthen the home-community school connection, and invest more resources to support accountability.

The North Carolina Economic Development Board echoed a similar set of priorities in its strategic plan also released in 2002. The first of the plan's four cornerstones, Develop a Globally Competitive Workforce, directs the state to build on its education system in ways responsive to the needs of a knowledge-based economy. Since its release, organizations throughout the state been active implementing the many action steps outlined in the plan, including: fully funding enrollment growth in the K-16 education system, adopting a comprehensive articulation agreement between public schools and community colleges, and modifying the state's workforce training process to speed the development of technology-trained workers.

In 2002, the Burroughs Wellcome Fund launched the North Carolina Science, Mathematics, and Technology Education Center with the stated mission of improving the performance of preK-12 education in science, mathematics, and technology as a means of providing all children in North Carolina with the knowledge and skills they will need to prosper in the economy of the future. In 2003, with financial support from the Bill and Melinda Gates Foundation, the Governor's Education Cabinet and the Public School Forum launched a private-public partnership to focus leadership and financial resources on comprehensive curriculum, teaching, and learning change in the state's high schools. This "New Schools Project" provides grants and other support to create up to 45 new small, autonomous schools across the state.

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The second cornerstone in North Carolina's economic development strategic plan is to Invest in Science, Technology, and University Outreach. Key components of this element of the plan include: fostering expanded technology transfer from universities, enhancing efforts to improve access to early stage capital, and linking the Economic Development Board's activities closely with those of the North Carolina Board of Science and Technology.

During 2003, the North Carolina Board of Science and Technology undertook a comprehensive assessment of North Carolina's innovation economy, and published its findings in a report entitled *Tracking Innovation: North Carolina Innovation Index*. This assessment provides the factual basis on which the Board is building a series of actionable recommendations to guide the development of policy in support of state investments in innovation and entrepreneurship over the coming year.

In 2003, the North Carolina Rural Economic Development Center established the Institute for Rural Entrepreneurship to stimulate and support the development of micro, small, and medium enterprises in North Carolina's rural counties. The Institute seeks to support: self-employment as an important source of jobs and income in rural North Carolina, the development of entrepreneurial companies that can grow and generate jobs and wealth in rural communities, and the creation of a culture in rural communities that recognizes the economic development power of entrepreneurship.

The Research Triangle Research Partnership, one of seven regional economic development partnerships in North Carolina, undertook a comprehensive strategic planning effort in 2004 that resulted in the creation of the report *Staying on Top: Winning the Job Wars of the Future*. This plan, which focuses only on the Research Triangle region, calls upon its institutional partners to: promote the growth of industry clusters where the region has a competitive advantage; use a balanced approach of targeted recruitment, branding, and business creation and retention; integrate higher education into economic development efforts; develop creative, inclusive approaches to rural prosperity; and create agile leadership networks to respond to market challenges and opportunities. Building on the success of this effort, in 2004 the North Carolina General Assembly provided funds to the state's six remaining economic development partnerships to encourage them to begin similar regionally specific strategic planning efforts.

In addition, in 2004 the University of North Carolina at Chapel Hill was one of eight universities in the nation selected by the Ewing Marion Kauffman Foundation to receive a grant expanding entrepreneurship education across campus. The university will use this multi-million dollar grant to fund the creation of the university's "Carolina Entrepreneurial Initiative." The goal of this effort is to foster the creation of a generation of entrepreneurs and to inspire them to create new knowledge and ventures with business and social impact.

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Oklahoma has placed a high priority on creating a culture of learning in the state. Recently ranked among the top three states with effective pre-school education programs, Oklahoma also has several innovative programs to promote growth in both higher education enrollment and the creation of a technologically skilled workforce.

The Economic Development Generating Excellence (EDGE) program, proposed by Governor Henry, is a comprehensive plan that will significantly improve Oklahoma's economy and quality of life. This plan creates a $1 billion endowment to support research and the transfer of innovation and technology to the private sector. The Oklahoma Department of Commerce and Oklahoma Higher Education are lead in the program, but the initiative is a cooperative effort of all Oklahoma state agencies involved and works in collaboration with federally funded programs such as the Gear-Up funds for K-8 and National Science Foundation grants. The national Experimental Program to Stimulate Competitive Research (EPSCoR) is also playing a major role in this cooperative effort under the EDGE program.

The Oklahoma Center for the Advancement of Science and Technology (OCAST), in conjunction with its Oklahoma Applied Research Support program, operates a faculty and student intern partnership program to assist Oklahoma in building a technology-oriented workforce. The intern partnership program encourages students to be scientists and engineers in order to increase the pool of these professionals in Oklahoma. The program has expanded to include students preparing for careers in technology-based fields.

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OCAST's focus on the total technology pipeline from concept to commercialization is supporting the growth of both innovation and entrepreneurship in Oklahoma. OCAST supports the Inventors Assistance Service, located at Oklahoma State University, to provide information and guidance to individuals interested in intellectual property issues.

In addition, two nonprofit organizations assist Oklahoma businesses with business plans, personnel and equipment needs. The Oklahoma Technology Commercialization Center helps Oklahoma's start-up technology companies compete for funding and special programs. This group has played a major role in increasing the capitalization of numerous companies and providing funds for special equipment or personnel to increase competitiveness. The Oklahoma Alliance for Manufacturing Excellence is another nonprofit group supported through OCAST. The Alliance assists small and medium-size manufacturing companies in implementing Lean Manufacturing techniques to increase their profitability.

Another important area for Oklahoma is the opportunity for small businesses of fewer than 500 employees to participate in the federal Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs. OCAST provides funds that help defray a portion of proposal preparation costs for SBIR proposals. Another OCAST initiative, SBIR matching funds, provides critical "bridge" funding to companies between Phase I and Phase II of their federal research projects.

Like the existing match funding programs such as the Applied Research Program and the Health Research Program that fund partnership arrangements, the newest addition of services is the OCAST Technology Business Finance Program (TBFP). TBFP is state-funded and requires successful applicants to leverage $3 of other resources for every $1 of financial assistance. Eligibility is determined by a firm's position in the development stage prior to full production. The program has a payback feature that ensures future funding for new advanced technology firms. More than $1 million has been paid back under terms of the program.

These programs accelerate research and development (R&D) and technology transfer for successful products, processes or services that benefit Oklahoma's economy. The programs also provide incentive funding for R&D projects that increase industry, university and university-industry partnerships. Program monitoring includes annual performance evaluations by the program reviewers and on-site visits by the OCAST applied research advisory committee members.

Signs of success are plentiful. In fiscal year 2003, for every tax dollar invested in these programs, $15 was invested in Oklahoma's economy. In the last 13 years, nearly 95 percent of the companies funded in the OCAST Applied Research Program are still in business and based in Oklahoma. In addition, the success rate for small businesses coming through OCAST to submit SBIR proposals surpasses 50 percent.

Goal 1: Create a culture of learning throughout the South, in which the acquisition, creation and application of knowledge is viewed as central to our health, happiness and prosperity

Several initiatives in education are driving computer literacy and the importance of science and technology to Puerto Rico's youth. The Department of Education has invested $100 million to install 10,000 computers across the public K-12 education system, thus providing Internet access to 300,000 students. The government has also identified 166 community centers where Internet access will be provided to low-income neighborhoods.

The Science of Wheels program sponsored by NASA, Pfizer and the University of Puerto Rico at Mayagüez has provided scientific demonstrations to more than 200 schools, 18,325 students and 1,000 teachers. Polytechnic University and the Puerto Rico Society of Professional Engineers sponsor the Mathcounts math coaching and competition program for middle-school students. This nationwide program aims to make math achievement as challenging, exciting and prestigious as a school sport. During 2002, more than 35 schools participated with 216 "mathletes" and the program was the only one in the nation with a perfect rate of retention from the previous year.

Finally, the Internet Society of Puerto Rico has been involved in several activities to evaluate the impact of the Internet on Puerto Rico including sponsoring a scientific study that concluded the Internet reaches 968,000 people in Puerto Rico, about one quarter of the population.

Goal 2: Encourage and support innovation and entrepreneurship.

Puerto Rico took a decisive step in the establishment of its innovation economy through the creation of the Puerto Rico Science, Technology & Research Trust. The Trust, seeded with a $100 million fund, is the non-profit institution that will set the public policy for science and technology, with an initial focus on the life sciences and information technology. The Trust will invest in basic and applied research, education and training, technology commercialization and services, recruiting world-class talent, and the construction of technology parks, among other activities.

Puerto Rico's communications and information technology cluster is implementing its Roadmap, launched in August 2002 following a study by McKinsey & Company. The Roadmap's key priorities are the promotion of public sector information technology services exports; information technology for Puerto Rico's life sciences sector; modern facilities for technology companies; and new technologies for the manufacturing sector. Exemplars of the new facilities are VITEC II, a technology business incubator, and the CyberCenter, a technology business accelerator for companies ready to commercialize their innovations. The Puerto Rico Industrial Development Company (PRIDCO) also partnered with Hewlett-Packard in the design and construction of Las Américas Technology Park, a 190-acre facility near the main technical campus of the University of Puerto Rico to be launched in 2006.

The Roadmap also created the Puerto Rico Research and Commercialization Alliance, a partnership between academia, business and government to fund applied research at local universities tied to the government's economic development strategy. In late 2003, the alliance raised $5.6 million for ten projects at various universities. These investments complement the $1 million VITEC seed fund for emerging technology companies.

The biotechnology, pharmaceutical, medical devices and healthcare services clusters came together in 2004 to develop a joint Health Clusters Roadmap. Led by INDUNIV, a non-profit Industry University Research Consortium, the Roadmap is fortifying the life sciences industry in Puerto Rico by leveraging existing manufacturing knowledge, workforce development efforts, branding initiatives and networking with expatriates.

The Health Clusters Roadmap also leverages key initiatives such as the smart card healthcare system being deployed in 2004 to 1.7 million Puerto Rican residents. This integrated information system provides visibility into the health status of the population, and will provide data to support clinical trials in Puerto Rico. Legislation was also recently passed granting tax benefits to companies performing such research.

The life sciences research agenda was also bolstered when PRIDCO and the University of Puerto Rico created a $40 million Centennial Fund to establish a bioprocess pilot plant, a biomolecular research facility, a technology transfer unit, and a fund to endow chairs for prominent science and technology scholars. INDUNIV also sponsored the creation of the CAPTECH Packaging Research Center to provide cutting edge packaging-related services to the pharmaceutical, diagnostic, medical devices and electronics industrial sectors.

The Technology Development and Commercialization Center, part of the nationwide Small Business Development Center (SBDC) network, has taken a leading role in boosting the number of winning Small Business Innovation Research (SBIR) proposals submitted by local entrepreneurs and researchers. PRIDCO is complementing these efforts with an SBIR Phase Zero Fund to promote proposals and an SBIR Matching Fund for Phase One winners.

Two regional technology-based economic development organizations are also continuing to strengthen and grow: the Puerto Rico TechnoEconomic Corridor in the western region hosts both electronics manufacturing and medical devices clusters. INTECO, uniting eight municipalities in the mideastern region of the Island, has focused on developing technology innovation centers, accelerating regional permitting and developing technology parks.

Goal 1: Create a culture of learning throughout the South, in which the acquisition, creation and application of knowledge is viewed as central to our health, happiness and prosperity.

The Palmetto Leadership program, an initiative that promotes leadership training at Clemson University, has set as a primary goal, " to increase the individual per capita incomes of all South Carolinians to the national level." South Carolina's citizens have 20 percent less in net worth than citizens in neighboring states. Consequently, the program has been involved in many economic development activities.

The commitment of the state's three research universities, and their investment to work together in technology economic development has drawn praise from as far away as California. Dr. Greenberg, president of the Medical University of South Carolina, Dr. Andrew Sorensen, president of University of South Carolina, and Dr. Jim Barker, president of Clemson University, have created new standards of excellence for the state's research universities. Aggressive building plans will increase the research capacity of each institution.

The community colleges are also very involved in economic development. The community college system received approval, through a legislative bill, to partner with private sector companies. This initiative will create new joint ventures with business leaders that will have immense impact.

Another area of tremendous growth has been conferences, conventions and trade shows held throughout the state. Some examples include FuelCell South, a technology industry and research conference. The Charleston Chamber of Commerce's Thinktec initiative, a program to promote an innovation-based economy, hosts an annual conference. And the Innoventure conference is a venture capital conference focused on introducing regional venture capital funds to high impact companies in South Carolina and western North Carolina.

Goal 2: Encourage and support innovation and entrepreneurship

South Carolina's entrepreneurial spirit is at an all time high. The South Carolina Technology Alliance has generated a great deal of enthusiasm on the importance of entrepreneurs and why they must be given support and assistance.

Since the last *Invented Here* report, many entrepreneurial councils and other groups have sprouted to focus on the development and support of high-tech entrepreneurs in South Carolina. One such organization is the Columbia Technology Entrepreneurial Council (CTEC), which meets monthly for a breakfast seminar. The seminar includes speakers from various fields of interest to the entrepreneurial community. In the last five years, more than 4,500 entrepreneurs have attended these meetings.

CTEC also sponsors *Last Tuesday*, an informal gathering of small businesses to discuss their achievements and challenges. CTEC has extended the invitation to other groups in SC to attend the sessions including the Information Technology Entrepreneurs Council, the Midlands Software Developers Association, and the Black Data Processors Association. Many of the participants have completed the Fast Track entrepreneurial training program offered by the Kauffman Foundation. Fast Track will be available in the future to anyone who is interested in starting his or her own business.

South Carolina now has one of the strongest venture capital (VC) plans in the country. Patterned after plans from other states such as Arkansas and Oklahoma, the South Carolina Venture Capital Investment Act provides tax credits to entice banks and insurance companies to put money into an investment pool. The money is distributed to venture capital firms that back young companies with high-growth potential.

Not only does the state have new venture capital mechanisms, but also a dozen or more VC companies have set up business within the state. Several angel-investing groups were created within the state, facilitating business expertise in areas critical for entrepreneurs, including the management of cash flow, inventory and human resources.

The General Assembly passed the new Life Sciences Act of 2004 with strong support from business leaders across the state. This legislation creates a $50 million venture capital fund and makes pharmaceutical and laboratory instrument manufacturers eligible for the same economic development incentives offered to other manufacturers.

The South Carolina legislature also passed legislation where research universities are encouraged to raise capital from the private sector to fund endowments for professorships in research areas targeted to create well-paying jobs and enhanced job opportunities for the people of South Carolina. The private contributions are matched, on a dollar-for-dollar basis, with money from the South Carolina Education Lottery. The General Assembly has thus far set aside $30 million annually from lottery revenues to help fund the initiative.

The South Carolina Technology Alliance publishes a quarterly newsletter called *Terabyte,* which tracks improvements in the innovation index, capital investments, reports on knowledge based technology growth and also sets the legislative agendas for technology each year. *Terabyte* has been one of the primary reporting tools for measuring South Carolina's progress.

The South Carolina Technology Alliance has begun measuring and tracking the state's patents and the value they will bring to the state. There has also been a dynamic increase in the number of patents being issued to South Carolina technology entrepreneurs in 2004.

Goal 1: Create a culture of learning throughout the South, in which the acquisition, creation, and application of knowledge is viewed as central to our health, happiness and prosperity.

The knowledge economy of the 21st century demands new skills from students and requires graduates to adapt quickly to technological change and master new techniques. One example of progressive thinking in Tennessee is the creation of a challenging college preparatory middle/high school located in the Bioscience Education Center in the core of the Memphis Medical Center District. MASE, or the Memphis Academy of Science and Engineering, opened its doors in 2003 as part of the Memphis Biotech Foundation and operates as a center of excellence in technology, science and math education.

The Center for Information Technology Education (CITE) was established to reform education, re-tool educators and workers, and disseminate information on information technology (IT) job opportunities and skills in order to meet the workforce demands of technology dependent industries. CITE is a consortium of universities, two-year colleges, secondary schools, businesses and industry and government organizations dedicated to improving the IT workforce in Tennessee.

A significant component of the overall strategy to create and support a culture of learning involves empowering and parterning organizations to perform optimally. An example is the state's financial support of regional technology councils that provide a network of people with knowledge of the development and application of technology to solve real world problems.

Goal 2: Encourage and support innovation and entrepreneurship.

The economic development leadership in Tennessee understands that robust economic growth is a product of innovation, and the acquisition and creation of knowledge in Tennessee will fuel jobs and wealth in the state. Governor Phil Bredesen is building a foundation for economic expansion by developing new strategies and programs to help prepare individuals and companies to compete in a global, technology driven economy. As a Harvard educated physicist and successful entrepreneur, Governor Bredesen is uniquely qualified to lead Tennessee into the 21st century and create a culture that enables sustainable success in the knowledge economy.

The Tennessee Department of Economic and Community Development (ECD) has undergone an unprecedented strategic planning process and subsequent reorganization under the direction of Commissioner Matt Kisber. This reorganization has resulted in a departmental "playbook" that specifically outlines strategic milestones and organizational accountability for all employees and team members. Furthermore, as part of a new focus on the technology-based economy in the state, a Technology Development Division was established to lead technology initiatives throughout the state.

New projects to strengthen research capabilities in Tennessee have become reality, and several more are under development. In Memphis, the FedEx Institute of Technology opened at the University of Memphis in the fall of 2003. The FedEx Institute, a public-private partnership established to support advanced research and education, serves as a breeding ground for technological innovation and as a point of intersection and collaboration between industry and academia. In Oak Ridge, the Joint Institute for Computational Sciences between the University of Tennessee (UT) and Oak Ridge National Laboratory (ORNL)opened its doors this year and will become the recognized world leader in advanced computation. The Joint Institute for Computational Sciences is the first of three joint institutes being developed between UT and ORNL, with institutes for Biological Sciences and Neutron Sciences set to open in 2005 and 2006 respectively.

Governor Bredesen unveiled two key initiatives to help create and bring new jobs to Tennessee. First, the governor created a "Jobs Cabinet," a 12-member body consisting of commissioners from seven state departments and representatives from higher education and business trade groups. The Jobs Cabinet meets on a regular basis and tours the state to gather firsthand insights and data needed to create effective economic development policy in Tennessee. Second, Governor Bredesen launched "FastTrack" by executive order to eliminate government red tape from the job creation business. The executive order directs all state government agencies to work together and provide timely responses to meet the needs and demands of businesses interested in investing in Tennessee.

Venture capital is necessary to turn Tennessee's current and future crop of growing businesses into the large employers of tomorrow. ECD continues to support the annual Tennessee Venture Forum, now in its eighth year. The TN Venture Forum showcases 20 of Tennessee's most promising early-stage companies to an audience of established venture capital investment groups and individuals. In Memphis, the second annual Musculoskeletal New Ventures Conference will be held at the FedEx Institute of Technology. This niche conference educates entrepreneurs in the medical device industry and matches promising businesses with targeted venture capital firms.

Goal 1: Create a culture of learning throughout the South, in which the acquisition, creation and application of knowledge is viewed as central to our health, happiness and prosperity.

Virginia continues to recognize that, in the modern economy, educational achievement is the single greatest predictor of prosperity, stable family life and good citizenship. As a result of the passage and enactment of a historic tax and budget reform package during the 2004 legislative session, the Governor and the General Assembly were able to invest $1.5 billion in public schools and $275 million in colleges and universities for the 2004-2006 budget. These funds will ensure that Virginia strives towards creating a culture of learning.

Improvements to workforce and economic development programs, as well as a reorganization of state technology agencies, have further improved the climate of innovation and entrepreneurship in Virginia. Echoing the theme of educational and economic opportunity, the 2004 General Assembly authorized studies of the need for a four-year university in Southside Virginia and of the feasibility of integrated research and academic campuses in Northern Virginia and Hampton Roads.

Governor Warner convened a "Higher Education Research Summit" in May 2003 aimed at exploring opportunities to promote and encourage research excellence at Virginia's colleges and universities. At the summit, Governor Warner challenged Virginia's public and private universities to establish goals for increasing research and development expenditures from $600 million to $1 billion by 2010. Following the summit, Governor Warner brought together 16 national experts in scientific research to assess Virginia's university research programs in the sciences, engineering and medicine. These eminent scholars reviewed 26 research programs and made recommendations on how to maximize the potential for success. As a result, the 2004 Virginia General Assembly provided $8.3 million in direct support for these programs as well as indirect support for equipment, lab space and graduate students.

In May 2004, Governor Warner highlighted the state's efforts to increase General Education Degree (GED) attainment at Richmond International Raceway. Joined by drivers from NASCAR, the Governor launched the "Race to GED" program with a goal to double the number of adults obtaining a GED by 2005.

Other efforts are underway to prepare Virginians all across the Commonwealth for the modern economy. Old Dominion University is embarking on an expansion of its statewide distance-learning network, Teletechnet, in cooperation with the Virginia Community College System. Additionally, the State Council of Higher Education is working with colleges and universities to improve the transition between high school and college so that more students can take advantage of a postsecondary education.

Goal 2: Encourage and support innovation and entrepreneurship

Governor Warner has consistently encouraged and supported the growth of Virginia's technology industries and entrepreneurs. Virginia's Center for Innovative Technology (CIT) continues to lead and execute the Commonwealth's technology-based economic development agenda by supporting targeted innovative industries and small technology entrepreneurs to build long-term economic value for the Commonwealth.

Virginia has a strong nanoscience research community and commercial nanotechnology sector. CIT invested seed funding to create the Institute for Nanotechnology in Virginia (INanoVA), a statewide consortium of Virginia's universities, federal labs, state agencies and industrial partners, dedicated to promoting collaborative nanotechnology research, workforce development, technology transfer and commercialization. Virginia has begun to develop strategic initiatives to position the Commonwealth as a leader in nanomaterials manufacturing.

The Governor's Advisory Board for the Virginia Biotechnology Initiative ensures that the Commonwealth will capitalize on this growth industry. The board is developing a biotechnology strategy that includes building the commercial base of biotechnology and providing leadership and budget recommendations. The growth of Virginia's bioscience cluster has been nurtured by the state's traditionally strong IT sector. CIT is leveraging the state's strengths by developing a unified "Smart Bio" vision and increasing collaboration among the state's research institutions, federal and state labs and businesses.

To capitalize on Virginia's proximity to the federal government and the number and variety of defense contractors in the state, CIT underwrites and operates the Institute for Defense and Homeland Security (IDHS), a consortium of university, industry and government research and development partners. IDHS is conducting research and development, education and technology transfer at member institutions and firms, with an emphasis in the fields of telecommunications, biodefense, sensor systems, remote presence, crisis management and risk management.

Access to quality, affordable high-speed communications technologies creates jobs, educates the workforce, and provides an entrance to the global marketplace. In recognition of this, the General Assembly has directed CIT to monitor trends and access to broadband communications services so that rural Virginians can participate in the new economy. CIT's broadband initiatives are increasing the deployment of affordable last-mile technologies into underserved areas, supplying expertise for community broadband planning initiatives as well as educational seminars to help businesses reach new markets through the Internet.

Goal 1: Create a culture of learning throughout the South, in which the acquisition, creation and application of knowledge is viewed as central to our health, happiness and prosperity.

West Virginia is among the top 15 states when it comes to per capita spending on college grants and scholarships. The Promise scholarship program, which provides free college tuition at public schools and subsidized tuition at private schools, is boosting the retention rate for college freshmen in the state. More than 80 percent of freshmen in 2002 returned as sophomores last fall-up from 77 percent the previous year. Nearly half the state's college freshmen in 2002 were members of the first class of Promise scholars. The college-going rate has climbed to 59 percent of high school students, up from 56 percent the previous year. West Virginia spent a total of $38.2 million on scholarships and grants in 2002-2003, or about $220 for every 18-24 year old in the state.

School achievement has continued to improve. The overall graduation rate was the fifth highest in the nation at 84 percent and its graduation rate for black students was 70 percent, the second highest in the nation. Average SAT scores for West Virginia's 2003 graduating seniors were above the national average in the verbal area.

The U.S. Department of Education awarded technology grants totaling $2.7 million to the West Virginia Department of Education. The grants will provide funding for scientific evaluations of how technology impacts student achievement in elementary and secondary education.

The EDGE program — Earn a Degree to Graduate Early — allows students to take high school courses for community and technical college credit. Students can earn an Associate Degree within one year after high school or concurrent with a high school diploma.

The state legislature passed several important pieces of legislation. Senate Bill 448 creates an autonomous policy board for community and technical colleges. The bill also establishes an independent community and technical college system to promote the quality technical degree and work skill programs needed by employers and employees alike.

The Education Technology Strategic Plan process will help keep West Virginia on the cutting edge in educational technology. While maintaining the goals and objectives of the current programs for computers in the public schools, the strategic planning process will provide additional flexibility for counties to develop technology solutions that address their unique needs and for utilizing the most cost-effective method for implementation.

The West Virginia Higher Education Policy Commission signed on with WebCT Vista to centralize on-line course delivery tools for all 16 of the state's public colleges and universities. This should help schools minimize hardware, save money for staffing by coordinating data collection, share course materials and give students new flexibility and access in gaining degrees.

West Virginia has been selected as one of four states in a long-term strategic planning project being conducted by the National Collaborative for Postsecondary Education Policy. The project is intended to identify and solidify support for public policies that can improve the performance of higher education in the state. The project will help West Virginia clarify state goals for higher education, evaluate the current ability to meet those goals, examine laws, policies, governance, practice, and customs relating to higher education, and show gaps or barriers in current conditions or policies.

Pocahontas County Free Libraries (PCFL) won the 2003 National Award for Museum and Library Service and was one of only three selected out of more than 100,000 libraries and the first West Virginia Library to ever win this prestigious award. Bill & Melinda Gates Foundation awarded $424,000 to help ensure continued access to technology and the Internet in public libraries.

Goal 2: Encourage and support innovation and entrepreneurship.

A total of $226 million in Economic Development Grant Bonds were awarded for new economic development projects (including biotechnology), capital improvement and infrastructure projects. West Virginia's tax incentives were overhauled and are in aligned with the goals of "A Vision Shared" (the state's technology plan) and include tax credits for Innovation Technology Commercialization Credits. A new Venture Capital Act significantly improved the climate for risk capital by providing $25 million in state money to be leveraged with up to $75 million of federal money.

Marshall University announced the Institute for Development of Entrepreneurial Advances (IDEA), which will turn biotechnology development into economic development for the University and the region. The program aims to commercialize science and technology, obtain patents, and collect royalties from ideas developed on the campus and in the community. A similar institute already exists at West Virginia University.

A new $4 million state bill established the Research Challenge Fund for higher education to help the support new research projects. Some of the money is earmarked for graduate science students fellowships and undergraduate research.

Benchmark		Current Data	Target	U.S. Average
1.1.A	Percentage of math teachers with major or minor in assigned field, grades 9-12	87%	90%	69.5%
1.1.B	Percentage of science teachers with major or minor in assigned field, grades 9-12	68.2%	90%	76.4%
1.1.C	Percentage of fourth graders at or above the proficient standard in reading on the NAEP	22%	40%	29%
1.1.D	Percentage of eighth graders at or above the proficient standard in reading on the NAEP	21%	40%	30%
1.1.E	Percentage of fourth graders at or above the proficient standard in math on the NAEP	19%	25%	31%
1.1.F	Percentage of eighth graders at or above the proficient standard in math on the NAEP	16%	26%	27%
1.1.G A	Percentage of eighth graders at or above the proficient standard in science on the NAEP	22%	NA	28%
1.1.G B	Percentage of eighth graders at or above the proficient standard in science on the NAEP	22%	30%	30%
1.1.H	Percentage of eighth graders at or above the proficient standard in writing on the NAEP	20%	25%	30%
1.1.I	Average SAT scores — verbal	560	575	504
1.1.J	Average SAT scores — math	559	575	516
1.1.K	Average composite scores on the ACT, American College Testing program, college admission exam	20.1	23.0	20.8
1.2.A	Associate's degrees granted as a percentage of the 18-24-year-old population	1.99%	3.0%	2.09%
1.2.B	Bachelor's degrees granted as percent of 18-24 population	4.84%	5.25%	4.55%
1.2.C	Percentage of 18-24 year olds enrolling in college	31%	40%	NA
1.2.D	First-time, full-time students completing a bachelor's degree within five years	46%	50%	NA
1.3.C	Percentage of population 25 years old and older with a high-school diploma or higher	75.3%	85%	80.4%
1.3.D	Percent of population scoring at level 1 on National Adult Literacy Survey	25%	20%	22%
1.3.E	Total fall college enrollment rates as a percentage of total population	5.2%	8.0%	5.3%
1.4.A	Percentage of bachelor's degrees granted in science and engineering	16.8%	20.0%	17.3%
1.4.B	Percentage of civilian workforce with a recent bachelor's degree in science or engineering	1.00%	1.42%	1.42%
1.4.C	Average weighted scores for 11th graders on Advanced Placement exams in math and science	2.57	3.5	3.16
1.5.A	Percentage of African-American population 25 years old or older with a high school diploma or higher	54.6%	65.0%	63.1%
1.5.B	Percentage of Hispanic population 25 years old and older with a high school diploma or higher	73.8%	78.0%	49.8%
1.5.C	Percentage of Native American population 25 years old and older with a high school diploma or higher	64.9%	70.0%	65.5%
1.5.D	Percentage of African-American population 25 years old and older with a bachelor's degree or higher	9.3%	12.0%	11.4%
1.5.E	Percentage of Hispanic population 25 years old or older with a bachelor's degree or higher	20.1%	22.0%	9.2%
1.5.F	Percentage of Native American population 25 years old and older with a bachelor's degree or higher	11.6%	13.0%	9.3%
1.6.A	Students per Internet-connected computer	7.4	6.8	5.6
1.6.B	Percentage of households with computers	43.7%	57.0%	56.5%
1.6.C	Percentage of households with Internet access	37.6	51.0%	50.5%
1.6.D	Percentage of ZIP codes with broadband providers	88%	76%	88%

Benchmark		Current Data	Target	U.S. Average
2.1.C	Technology-intensive employment as a percentage of total employment	7.2%	9.0%	8.9%
2.1.D	Technology-intensive establishments as a percentage of total establishments	4.1%	5.7%	5.9%
2.1.E	Number of Small Business Innovation Research (SBIR) awards per 10,000 business establishments	8.3	10.0	8.1
2.1.F	Number of *Inc. Magazine's* best 500 companies per 10,000 business establishments	0.80	1.00	0.71
2.2.A	Industry-performed R&D per $1,000 gross state product	$5.06	$10.00	$18.97
2.2.B	Federally-performed R&D expenditures per $1,000 gross state product	$5.55	$7.32	$1.49
2.2.C	University-performed R&D expenditures per $1,000 gross state product	$3.57	$6.00	$3.01
2.2.D	Percentage of recent science and engineering Ph.D.s in the workforce	0.09%	0.11%	0.14%
2.2.E	Number of patents issued per 10,000 business establishments	44	60	137
2.2.F	Number of patent attorneys and agents per 10,000 business establishments	7	8.5	35
2.3.A	Venture capital disbursements, in millions	$23.7	$500	$21,086.8
2.3.B	Small Business Investment Companies (SBIC) awards	141	300	19472
2.3 C	Small Business Administration 7(a) business loans	215	450	1345
2.3.D	Number of Small Business Development Centers, per 10,000 establishments	0.8	1.0	.7
2.3.E	Minority-owned firms as a percentage of total businesses	10%	15%	15%
2.3.F	Women-owned firms as a percentage of total businesses	24%	28%	26%
2.4.A	Merchandise exports as a share of gross state product	7.4%	8.0%	7.4%
2.4.B	Firms that export per 1,000 firms	29.5	35.0	33.6%
2.4.C	Number of foreign students enrolled in U.S. colleges and universities, per 10,000 student population	14.36	16.00	20.85
2.4.D	Number of U.S. college and university students enrolled in foreign study programs, per 10,000 population	2.26	5.00	5.73
2.4.E	Foreign direct investment per capita	$3,908	$4,500	$3,866

Benchmark		Current Data	Target	U.S. Average
1.1.A	Percentage of math teachers with major or minor in assigned field, grades 9-12	NA	90%	69.5%
1.1.B	Percentage of science teachers with major or minor in assigned field, grades 9-12	NA	95%	76.4%
1.1.C	Percentage of fourth graders at or above the proficient standard in reading on the NAEP	26%	50%	29%
1.1.D	Percentage of eighth graders at or above the proficient standard in reading on the NAEP	28%	50%	30%
1.1.E	Percentage of fourth graders at or above the proficient standard in math on the NAEP	26%	50%	31%
1.1.F	Percentage of eighth graders at or above the proficient standard in math on the NAEP	19%	50%	27%
1.1.G A	Percentage of eighth graders at or above the proficient standard in science on the NAEP	24%	NA	28%
1.1.G B	Percentage of eighth graders at or above the proficient standard in science on the NAEP	23%	50%	30%
1.1.H	Percentage of eighth graders at or above the proficient standard in writing on the NAEP	20%	50%	30%
1.1.I	Average SAT scores — verbal	560	570	504
1.1.J	Average SAT scores — math	556	565	516
1.1.K	Average composite scores on the ACT, American College Testing program, college admission exam	20.2	23.0	20.8
1.2.A	Associate's degrees granted as a percentage of the 18-24-year-old population	1.48%	2.50%	2.09%
1.2.B	Bachelor's degrees granted as percent of 18-24 population	3.59%	5.60%	4.55%
1.2.C	Percentage of 18-24 year olds enrolling in college	24%	33%	NA
1.2.D	First-time, full-time students completing a bachelor's degree within five years	38%	45%	NA
1.3.C	Percentage of population 25 years old and older with a high-school diploma or higher	75.3%	85.0%	80.4%
1.3.D	Percent of population scoring at level 1 on National Adult Literacy Survey	22%	19%	22%
1.3.E	Total fall college enrollment rates as a percentage of total population	4.2%	5.0%	5.3%
1.4.A	Percentage of bachelor's degrees granted in science and engineering	17.1%	17.5%	17.3%
1.4.B	Percentage of civilian workforce with a recent bachelor's degree in science or engineering	0.42%	0.95%	1.42%
1.4.C	Average weighted scores for 11th graders on Advanced Placement exams in math and science	2.75	3.4	3.16
1.5.A	Percentage of African-American population 25 years old or older with a high school diploma or higher	51.5%	60.0%	63.1%
1.5.B	Percentage of Hispanic population 25 years old and older with a high school diploma or higher	59.1%	69.0%	49.8%
1.5.C	Percentage of Native American population 25 years old and older with a high school diploma or higher	65.4%	67.0%	65.5%
1.5.D	Percentage of African-American population 25 years old and older with a bachelor's degree or higher	8.4%	10.0%	11.4%
1.5.E	Percentage of Hispanic population 25 years old or older with a bachelor's degree or higher	11.1%	18.0%	9.2%
1.5.F	Percentage of Native American population 25 years old and older with a bachelor's degree or higher	9.8%	10.8%	9.3%
1.6.A	Students per Internet-connected computer	5.1	5.0	5.6
1.6.B	Percentage of households with computers	46.8%	50.0%	56.5%
1.6.C	Percentage of households with Internet access	36.9%	41.4%	50.5%
1.6.D	Percentage of ZIP codes with broadband providers	74%	60%	88%

	Benchmark	Current Data	Target	U.S. Average
2.1.C	Technology-intensive employment as a percentage of total employment	6.6%	7.4%	8.9%
2.1.D	Technology-intensive establishments as a percentage of total establishments	3.3%	4.5%	5.9%
2.1.E	Number of Small Business Innovation Research (SBIR) awards per 10,000 business establishments	1.3	3.0	8.1
2.1.F	Number of *Inc. Magazine's* best 500 companies per 10,000 business establishments	0.32	0.60	0.71
2.2.A	Industry-performed R&D per $1,000 gross state product	$4.03	$7.00	$18.97
2.2.B	Federally-performed R&D expenditures per $1,000 gross state product	$.67	$2.49	$1.49
2.2.C	University-performed R&D expenditures per $1,000 gross state product	$1.93	$3.00	$3.01
2.2.D	Percentage of recent science and engineering Ph.D.s in the workforce	0.09%	0.09%	0.14%
2.2.E	Number of patents issued per 10,000 business establishments	37	55	137
2.2.F	Number of patent attorneys and agents per 10,000 business establishments	4	11	35
2.3.A	Venture capital disbursements, in millions	$9.3	$200	$21,086.8
2.3.B	Small Business Investment Companies (SBIC) awards	72	90	19472
2.3 C	Small Business Administration 7(a) business loans	353	525	1345
2.3.D	Number of Small Business Development Centers, per 10,000 establishments	0.6	2.5	.7
2.3.E	Minority-owned firms as a percentage of total businesses	7%	14%	15%
2.3.F	Women-owned firms as a percentage of total businesses	22%	27%	26%
2.4.A	Merchandise exports as a share of gross state product	4.4%	7.5%	7.4%
2.4.B	Firms that export per 1,000 firms	30.1	35.0	33.6%
2.4.C	Number of foreign students enrolled in U.S. colleges and universities, per 10,000 student population	10.02	14.00	20.85
2.4.D	Number of U.S. college and university students enrolled in foreign study programs, per 10,000 population	2.94	4.50	5.73
2.4.E	Foreign direct investment per capita	$2,204	$3,304	$3,866

Benchmark		Current Data	Target	U.S. Average
1.1.A	Percentage of math teachers with major or minor in assigned field, grades 9-12	55.9%	80%	69.5%
1.1.B	Percentage of science teachers with major or minor in assigned field, grades 9-12	NA	87%	76.4%
1.1.C	Percentage of fourth graders at or above the proficient standard in reading on the NAEP	28%	29%	29%
1.1.D	Percentage of eighth graders at or above the proficient standard in reading on the NAEP	26%	32%	30%
1.1.E	Percentage of fourth graders at or above the proficient standard in math on the NAEP	27%	24%	31%
1.1.F	Percentage of eighth graders at or above the proficient standard in math on the NAEP	22%	26%	27%
1.1.G A	Percentage of eighth graders at or above the proficient standard in science on the NAEP	23%	NA	28%
1.1.G B	Percentage of eighth graders at or above the proficient standard in science on the NAEP	23%	32%	30%
1.1.H	Percentage of eighth graders at or above the proficient standard in writing on the NAEP	25%	25%	30%
1.1.I	Average SAT scores — verbal	489	501	504
1.1.J	Average SAT scores — math	491	505	516
1.1.K	Average composite scores on the ACT, American College Testing program, college admission exam	19.8	NA	20.8
1.2.A	Associate's degrees granted as a percentage of the 18-24-year-old population	.93%	1.71%	2.09%
1.2.B	Bachelor's degrees granted as percent of 18-24 population	3.49%	5.55%	4.55%
1.2.C	Percentage of 18-24 year olds enrolling in college	24%	29%	NA
1.2.D	First-time, full-time students completing a bachelor's degree within five years	42%	54%	NA
1.3.C	Percentage of population 25 years old and older with a high-school diploma or higher	78.6%	88.0%	80.4%
1.3.D	Percent of population scoring at level 1 on National Adult Literacy Survey	23%	NA	22%
1.3.E	Total fall college enrollment rates as a percentage of total population	4.0%	NA	5.3%
1.4.A	Percentage of bachelor's degrees granted in science and engineering	18.3%	20.0%	17.3%
1.4.B	Percentage of civilian workforce with a recent bachelor's degree in science or engineering	1.29%	1.50%	1.42%
1.4.C	Average weighted scores for 11th graders on Advanced Placement exams in math and science	3.05	3.2	3.16
1.5.A	Percentage of African-American population 25 years old or older with a high school diploma or higher	58.6%	88.0%	63.1%
1.5.B	Percentage of Hispanic population 25 years old and older with a high school diploma or higher	66.2%	67.0%	49.8%
1.5.C	Percentage of Native American population 25 years old and older with a high school diploma or higher	71.6%	NA	65.5%
1.5.D	Percentage of African-American population 25 years old and older with a bachelor's degree or higher	11.0%	16.5%	11.4%
1.5.E	Percentage of Hispanic population 25 years old or older with a bachelor's degree or higher	20.5%	21.0%	9.2%
1.5.F	Percentage of Native American population 25 years old and older with a bachelor's degree or higher	12.5%	NA	9.3%
1.6.A	Students per Internet-connected computer	6.0	6.6	5.6
1.6.B	Percentage of households with computers	52.4%	57.0%	56.5%
1.6.C	Percentage of households with Internet access	46.7%	47.0%	50.5%
1.6.D	Percentage of ZIP codes with broadband providers	94%	71%	88%

Benchmark		Current Data	Target	U.S. Average
2.1.C	Technology-intensive employment as a percentage of total employment	7.3%	8.4%	8.9%
2.1.D	Technology-intensive establishments as a percentage of total establishments	6.4%	6.4%	5.9%
2.1.E	Number of Small Business Innovation Research (SBIR) awards per 10,000 business establishments	2.4	4.2	8.1
2.1.F	Number of *Inc. Magazine's* best 500 companies per 10,000 business establishments	0.95	1.60	0.71
2.2.A	Industry-performed R&D per $1,000 gross state product	$5.33	$13.00-$20.00	$18.97
2.2.B	Federally-performed R&D expenditures per $1,000 gross state product	$.92	$1.26-$1.56	$1.49
2.2.C	University-performed R&D expenditures per $1,000 gross state product	$3.13	$3.20-$3.30	$3.01
2.2.D	Percentage of recent science and engineering Ph.D.s in the workforce	0.11%	0.13%	0.14%
2.2.E	Number of patents issued per 10,000 business establishments	78	113	137
2.2.F	Number of patent attorneys and agents per 10,000 business establishments	7	20	35
2.3.A	Venture capital disbursements, in millions	$561.8	$500-$3,000	$21,086.8
2.3.B	Small Business Investment Companies (SBIC) awards	468	558	19472
2.3 C	Small Business Administration 7(a) business loans	1498	1,300	1345
2.3.D	Number of Small Business Development Centers, per 10,000 establishments	1.0	NA	.7
2.3.E	Minority-owned firms as a percentage of total businesses	16%	21%	15%
2.3.F	Women-owned firms as a percentage of total businesses	26%	27%	26%
2.4.A	Merchandise exports as a share of gross state product	5.3%	7.4%	7.4%
2.4.B	Firms that export per 1,000 firms	49.4	57.0	33.6%
2.4.C	Number of foreign students enrolled in U.S. colleges and universities, per 10,000 student population	14.98	16.80	20.85
2.4.D	Number of U.S. college and university students enrolled in foreign study programs, per 10,000 population	5.76	9.30	5.73
2.4.E	Foreign direct investment per capita	$3,801	$4,400	$3,866

Benchmark		Current Data	Target	U.S. Average
1.1.A	Percentage of math teachers with major or minor in assigned field, grades 9-12	49.3%	100%	69.5%
1.1.B	Percentage of science teachers with major or minor in assigned field, grades 9-12	NA	100%	76.4%
1.1.C	Percentage of fourth graders at or above the proficient standard in reading on the NAEP	29%	49%	29%
1.1.D	Percentage of eighth graders at or above the proficient standard in reading on the NAEP	32%	49%	30%
1.1.E	Percentage of fourth graders at or above the proficient standard in math on the NAEP	22%	36%	31%
1.1.F	Percentage of eighth graders at or above the proficient standard in math on the NAEP	24%	36%	27%
1.1.G A	Percentage of eighth graders at or above the proficient standard in science on the NAEP	29%	NA	28%
1.1.G B	Percentage of eighth graders at or above the proficient standard in science on the NAEP	29%	43%	30%
1.1.H	Percentage of eighth graders at or above the proficient standard in writing on the NAEP	25%	41%	30%
1.1.I	Average SAT scores — verbal	550	555	504
1.1.J	Average SAT scores — math	552	555	516
1.1.K	Average composite scores on the ACT, American College Testing program, college admission exam	20.0	20.6	20.8
1.2.A	Associate's degrees granted as a percentage of the 18-24-year-old population	1.62%	2.19%	2.09%
1.2.B	Bachelor's degrees granted as percent of 18-24 population	3.89%	4.63%	4.55%
1.2.C	Percentage of 18-24 year olds enrolling in college	33%	NA	NA
1.2.D	First-time, full-time students completing a bachelor's degree within five years	43%	NA	NA
1.3.C	Percentage of population 25 years old and older with a high-school diploma or higher	74.1%	84.1%	80.4%
1.3.D	Percent of population scoring at level 1 on National Adult Literacy Survey	19%	18%	22%
1.3.E	Total fall college enrollment rates as a percentage of total population	4.6%	5.4%	5.3%
1.4.A	Percentage of bachelor's degrees granted in science and engineering	16.3%	17.6%	17.3%
1.4.B	Percentage of civilian workforce with a recent bachelor's degree in science or engineering	0.77%	1.42%	1.42%
1.4.C	Average weighted scores for 11th graders on Advanced Placement exams in math and science	2.65	3.2	3.16
1.5.A	Percentage of African-American population 25 years old or older with a high school diploma or higher	61.7%	63.1%	63.1%
1.5.B	Percentage of Hispanic population 25 years old and older with a high school diploma or higher	74.0%	74.0%	49.8%
1.5.C	Percentage of Native American population 25 years old and older with a high school diploma or higher	59.8%	65.5%	65.5%
1.5.D	Percentage of African-American population 25 years old and older with a bachelor's degree or higher	7.7%	11.4%	11.4%
1.5.E	Percentage of Hispanic population 25 years old or older with a bachelor's degree or higher	18.9%	18.9%	9.2%
1.5.F	Percentage of Native American population 25 years old and older with a bachelor's degree or higher	8.0%	9.3%	9.3%
1.6.A	Students per Internet-connected computer	5.5	6.1	5.6
1.6.B	Percentage of households with computers	49.8%	85.0%	56.5%
1.6.C	Percentage of households with Internet access	44.2%	80.0%	50.5%
1.6.D	Percentage of ZIP codes with broadband providers	73%	80%	88%

	Benchmark	Current Data	Target	U.S. Average
2.1.C	Technology-intensive employment as a percentage of total employment	8.2%	10.0%	8.9%
2.1.D	Technology-intensive establishments as a percentage of total establishments	3.9%	5.0%	5.9%
2.1.E	Number of Small Business Innovation Research (SBIR) awards per 10,000 business establishments	1.5	10.0	8.1
2.1.F	Number of *Inc. Magazine's* best 500 companies per 10,000 business establishments	0.78	1.10	0.71
2.2.A	Industry-performed R&D per $1,000 gross state product	$4.91	$11.00	$18.97
2.2.B	Federally-performed R&D expenditures per $1,000 gross state product	$.06	$0.55	$1.49
2.2.C	University-performed R&D expenditures per $1,000 gross state product	$2.31	$3.00	$3.01
2.2.D	Percentage of recent science and engineering Ph.D.s in the workforce	0.08%	0.14%	0.14%
2.2.E	Number of patents issued per 10,000 business establishments	58	75	137
2.2.F	Number of patent attorneys and agents per 10,000 business establishments	8	10	35
2.3.A	Venture capital disbursements, in millions	$3.0	$500	$21,086.8
2.3.B	Small Business Investment Companies (SBIC) awards	174	200	19472
2.3 C	Small Business Administration 7(a) business loans	414	750	1345
2.3.D	Number of Small Business Development Centers, per 10,000 establishments	0.6	2.0	.7
2.3.E	Minority-owned firms as a percentage of total businesses	5%	8%	15%
2.3.F	Women-owned firms as a percentage of total businesses	23%	25%	26%
2.4.A	Merchandise exports as a share of gross state product	9.6%	8.2%	7.4%
2.4.B	Firms that export per 1,000 firms	39.7	34.0	33.6%
2.4.C	Number of foreign students enrolled in U.S. colleges and universities, per 10,000 student population	12.42	18.29	20.85
2.4.D	Number of U.S. college and university students enrolled in foreign study programs, per 10,000 population	4.01	5.11	5.73
2.4.E	Foreign direct investment per capita	$5,669	$4,298	$3,866

Benchmark		Current Data	Target	U.S. Average
1.1.A	Percentage of math teachers with major or minor in assigned field, grades 9-12	65.3%	90%	69.5%
1.1.B	Percentage of science teachers with major or minor in assigned field, grades 9-12	NA	90%	76.4%
1.1.C	Percentage of fourth graders at or above the proficient standard in reading on the NAEP	20%	60%	29%
1.1.D	Percentage of eighth graders at or above the proficient standard in reading on the NAEP	22%	60%	30%
1.1.E	Percentage of fourth graders at or above the proficient standard in math on the NAEP	21%	60%	31%
1.1.F	Percentage of eighth graders at or above the proficient standard in math on the NAEP	17%	60%	27%
1.1.G A	Percentage of eighth graders at or above the proficient standard in science on the NAEP	19%	NA	28%
1.1.G B	Percentage of eighth graders at or above the proficient standard in science on the NAEP	18%	60%	30%
1.1.H	Percentage of eighth graders at or above the proficient standard in writing on the NAEP	18%	60%	30%
1.1.I	Average SAT scores — verbal	561	572	504
1.1.J	Average SAT scores — math	559	568	516
1.1.K	Average composite scores on the ACT, American College Testing program, college admission exam	19.6	21.0	20.8
1.2.A	Associate's degrees granted as a percentage of the 18-24-year-old population	1.18%	2.16%	2.09%
1.2.B	Bachelor's degrees granted as percent of 18-24 population	4.19%	5.30%	4.55%
1.2.C	Percentage of 18-24 year olds enrolling in college	32%	33%	NA
1.2.D	First-time, full-time students completing a bachelor's degree within five years	32%	39%	NA
1.3.C	Percentage of population 25 years old and older with a high-school diploma or higher	74.8%	89.0%	80.4%
1.3.D	Percent of population scoring at level 1 on National Adult Literacy Survey	28%	NA	22%
1.3.E	Total fall college enrollment rates as a percentage of total population	5.0%	5.0%	5.3%
1.4.A	Percentage of bachelor's degrees granted in science and engineering	18.4%	19.0%	17.3%
1.4.B	Percentage of civilian workforce with a recent bachelor's degree in science or engineering	0.70%	1.00%	1.42%
1.4.C	Average weighted scores for 11th graders on Advanced Placement exams in math and science	3.17	3.2	3.16
1.5.A	Percentage of African-American population 25 years old or older with a high school diploma or higher	53.1%	65.0%	63.1%
1.5.B	Percentage of Hispanic population 25 years old and older with a high school diploma or higher	67.7%	72.0%	49.8%
1.5.C	Percentage of Native American population 25 years old and older with a high school diploma or higher	49.1%	55.0%	65.5%
1.5.D	Percentage of African-American population 25 years old and older with a bachelor's degree or higher	9.1%	14.0%	11.4%
1.5.E	Percentage of Hispanic population 25 years old or older with a bachelor's degree or higher	16.6%	17.0%	9.2%
1.5.F	Percentage of Native American population 25 years old and older with a bachelor's degree or higher	5.5%	5.6%	9.3%
1.6.A	Students per Internet-connected computer	8.2	5.0	5.6
1.6.B	Percentage of households with computers	45.7%	65.0%	56.5%
1.6.C	Percentage of households with Internet access	40.2%	65.0%	50.5%
1.6.D	Percentage of ZIP codes with broadband providers	90%	100%	88%

	Benchmark	Current Data	Target	U.S. Average
2.1.C	Technology-intensive employment as a percentage of total employment	5.7%	9.0%	8.9%
2.1.D	Technology-intensive establishments as a percentage of total establishments	4.1%	8.6%	5.9%
2.1.E	Number of Small Business Innovation Research (SBIR) awards per 10,000 business establishments	1.2	3.2	8.1
2.1.F	Number of *Inc. Magazine's* best 500 companies per 10,000 business establishments	0.20	0.70	0.71
2.2.A	Industry-performed R&D per $1,000 gross state product	$.92	$10.00	$18.97
2.2.B	Federally-performed R&D expenditures per $1,000 gross state product	$.72	$2.14	$1.49
2.2.C	University-performed R&D expenditures per $1,000 gross state product	$2.90	$4.22	$3.01
2.2.D	Percentage of recent science and engineering Ph.D.s in the workforce	0.09%	0.12%	0.14%
2.2.E	Number of patents issued per 10,000 business establishments	55	110	137
2.2.F	Number of patent attorneys and agents per 10,000 business establishments	9	15	35
2.3.A	Venture capital disbursements, in millions	$36.5	$220	$21,086.8
2.3.B	Small Business Investment Companies (SBIC) awards	64	150	19472
2.3 C	Small Business Administration 7(a) business loans	420	980	1345
2.3.D	Number of Small Business Development Centers, per 10,000 establishments	0.6	NA	.7
2.3.E	Minority-owned firms as a percentage of total businesses	14%	21%	15%
2.3.F	Women-owned firms as a percentage of total businesses	24%	28%	26%
2.4.A	Merchandise exports as a share of gross state product	14.6%	17%	7.4%
2.4.B	Firms that export per 1,000 firms	32.8	40.0	33.6%
2.4.C	Number of foreign students enrolled in U.S. colleges and universities, per 10,000 student population	14.62	19.20	20.85
2.4.D	Number of U.S. college and university students enrolled in foreign study programs, per 10,000 population	3.43	5.00	5.73
2.4.E	Foreign direct investment per capita	$7,382	$7,500	$3,866

Benchmark		Current Data	Target	U.S. Average
1.1.A	Percentage of math teachers with major or minor in assigned field, grades 9-12	51.6%	90%	69.5%
1.1.B	Percentage of science teachers with major or minor in assigned field, grades 9-12	66.8%	82%	76.4%
1.1.C	Percentage of fourth graders at or above the proficient standard in reading on the NAEP	15%	25%	29%
1.1.D	Percentage of eighth graders at or above the proficient standard in reading on the NAEP	20%	26%	30%
1.1.E	Percentage of fourth graders at or above the proficient standard in math on the NAEP	17%	17%	31%
1.1.F	Percentage of eighth graders at or above the proficient standard in math on the NAEP	12%	15%	27%
1.1.G A	Percentage of eighth graders at or above the proficient standard in science on the NAEP	14%	NA	28%
1.1.G B	Percentage of eighth graders at or above the proficient standard in science on the NAEP	15%	22%	30%
1.1.H	Percentage of eighth graders at or above the proficient standard in writing on the NAEP	13%	24%	30%
1.1.I	Average SAT scores — verbal	559	579	504
1.1.J	Average SAT scores — math	547	558	516
1.1.K	Average composite scores on the ACT, American College Testing program, college admission exam	18.6	21.0	20.8
1.2.A	Associate's degrees granted as a percentage of the 18-24-year-old population	2.18%	2.30%	2.09%
1.2.B	Bachelor's degrees granted as percent of 18-24 population	3.53%	4.76%	4.55%
1.2.C	Percentage of 18-24 year olds enrolling in college	34%	35%	NA
1.2.D	First-time, full-time students completing a bachelor's degree within five years	44%	48%	NA
1.3.C	Percentage of population 25 years old and older with a high-school diploma or higher	72.9%	82.8%	80.4%
1.3.D	Percent of population scoring at level 1 on National Adult Literacy Survey	30%	22%	22%
1.3.E	Total fall college enrollment rates as a percentage of total population	4.8%	8.0%	5.3%
1.4.A	Percentage of bachelor's degrees granted in science and engineering	17.2%	16.4%	17.3%
1.4.B	Percentage of civilian workforce with a recent bachelor's degree in science or engineering	1.05%	1.06%	1.42%
1.4.C	Average weighted scores for 11th graders on Advanced Placement exams in math and science	2.39	3.2	3.16
1.5.A	Percentage of African-American population 25 years old or older with a high school diploma or higher	47.3%	59.4%	63.1%
1.5.B	Percentage of Hispanic population 25 years old and older with a high school diploma or higher	67.7%	71.5%	49.8%
1.5.C	Percentage of Native American population 25 years old and older with a high school diploma or higher	57.4%	65.5%	65.5%
1.5.D	Percentage of African-American population 25 years old and older with a bachelor's degree or higher	8.8%	10.2%	11.4%
1.5.E	Percentage of Hispanic population 25 years old or older with a bachelor's degree or higher	17.1%	20.1%	9.2%
1.5.F	Percentage of Native American population 25 years old and older with a bachelor's degree or higher	8.1%	9.8%	9.3%
1.6.A	Students per Internet-connected computer	5.6	7.9	5.6
1.6.B	Percentage of households with computers	41.9%	51.5%	56.5%
1.6.C	Percentage of households with Internet access	36.1%	41.4%	50.5%
1.6.D	Percentage of ZIP codes with broadband providers	88%	59%	88%

Benchmark		Current Data	Target	U.S. Average
2.1.C	Technology-intensive employment as a percentage of total employment	6.0%	7.9%	8.9%
2.1.D	Technology-intensive establishments as a percentage of total establishments	3.1%	4.3%	5.9%
2.1.E	Number of Small Business Innovation Research (SBIR) awards per 10,000 business establishments	1.6	6.1	8.1
2.1.F	Number of *Inc. Magazine's* best 500 companies per 10,000 business establishments	0.67	0.50	0.71
2.2.A	Industry-performed R&D per $1,000 gross state product	$1.5	$6.44	$18.97
2.2.B	Federally-performed R&D expenditures per $1,000 gross state product	$2.77	$5.44	$1.49
2.2.C	University-performed R&D expenditures per $1,000 gross state product	$3.22	$2.94	$3.01
2.2.D	Percentage of recent science and engineering Ph.D.s in the workforce	0.10%	0.09%	0.14%
2.2.E	Number of patents issued per 10,000 business establishments	37	60	137
2.2.F	Number of patent attorneys and agents per 10,000 business establishments	2	9	35
2.3.A	Venture capital disbursements, in millions	$5.1	$266	$21,086.8
2.3.B	Small Business Investment Companies (SBIC) awards	69	128	19472
2.3 C	Small Business Administration 7(a) business loans	488	445	1345
2.3.D	Number of Small Business Development Centers, per 10,000 establishments	0.3	5.0	.7
2.3.E	Minority-owned firms as a percentage of total businesses	7%	15%	15%
2.3.F	Women-owned firms as a percentage of total businesses	23%	26%	26%
2.4.A	Merchandise exports as a share of gross state product	4.9%	7.8%	7.4%
2.4.B	Firms that export per 1,000 firms	30.6	38.2	33.6%
2.4.C	Number of foreign students enrolled in U.S. colleges and universities, per 10,000 student population	7.53	14.70	20.85
2.4.D	Number of U.S. college and university students enrolled in foreign study programs, per 10,000 population	2.76	4.20	5.73
2.4.E	Foreign direct investment per capita	$1,717	$2,947	$3,866

Benchmark		Current Data	Target	U.S. Average
1.1.A	Percentage of math teachers with major or minor in assigned field, grades 9-12	67.2%	95%	69.5%
1.1.B	Percentage of science teachers with major or minor in assigned field, grades 9-12	NA	95%	76.4%
1.1.C	Percentage of fourth graders at or above the proficient standard in reading on the NAEP	32%	35%	29%
1.1.D	Percentage of eighth graders at or above the proficient standard in reading on the NAEP	33%	35%	30%
1.1.E	Percentage of fourth graders at or above the proficient standard in math on the NAEP	30%	35%	31%
1.1.F	Percentage of eighth graders at or above the proficient standard in math on the NAEP	28%	35%	27%
1.1.G A	Percentage of eighth graders at or above the proficient standard in science on the NAEP	35%	NA	28%
1.1.G B	Percentage of eighth graders at or above the proficient standard in science on the NAEP	36%	40%	30%
1.1.H	Percentage of eighth graders at or above the proficient standard in writing on the NAEP	27%	35%	30%
1.1.I	Average SAT scores — verbal	574	590	504
1.1.J	Average SAT scores — math	580	590	516
1.1.K	Average composite scores on the ACT, American College Testing program, college admission exam	21.5	24.0	20.8
1.2.A	Associate's degrees granted as a percentage of the 18-24-year-old population	1.98%	4.00%	2.09%
1.2.B	Bachelor's degrees granted as percent of 18-24 population	5.6%	6.00%	4.55%
1.2.C	Percentage of 18-24 year olds enrolling in college	32%	35%	NA
1.2.D	First-time, full-time students completing a bachelor's degree within five years	48%	55%	NA
1.3.C	Percentage of population 25 years old and older with a high-school diploma or higher	81.3%	89.0%	80.4%
1.3.D	Percent of population scoring at level 1 on National Adult Literacy Survey	17%	15%	22%
1.3.E	Total fall college enrollment rates as a percentage of total population	5.7%	7.5%	5.3%
1.4.A	Percentage of bachelor's degrees granted in science and engineering	16.8%	20.0%	17.3%
1.4.B	Percentage of civilian workforce with a recent bachelor's degree in science or engineering	1.29%	1.75%	1.42%
1.4.C	Average weighted scores for 11th graders on Advanced Placement exams in math and science	3.42	3.7	3.16
1.5.A	Percentage of African-American population 25 years old or older with a high school diploma or higher	65.1%	70.0%	63.1%
1.5.B	Percentage of Hispanic population 25 years old and older with a high school diploma or higher	71.0%	75.0%	49.8%
1.5.C	Percentage of Native American population 25 years old and older with a high school diploma or higher	65.1%	72.5%	65.5%
1.5.D	Percentage of African-American population 25 years old and older with a bachelor's degree or higher	11.2%	12.0%	11.4%
1.5.E	Percentage of Hispanic population 25 years old or older with a bachelor's degree or higher	18.0%	23.0%	9.2%
1.5.F	Percentage of Native American population 25 years old and older with a bachelor's degree or higher	11.0%	15.0%	9.3%
1.6.A	Students per Internet-connected computer	4.9	5.0	5.6
1.6.B	Percentage of households with computers	55.3%	75.0%	56.5%
1.6.C	Percentage of households with Internet access	49.9%	70.0%	50.5%
1.6.D	Percentage of ZIP codes with broadband providers	81%	75%	88%

	Benchmark	Current Data	Target	U.S. Average
2.1.C	Technology-intensive employment as a percentage of total employment	8.3%	10.0%	8.9%
2.1.D	Technology-intensive establishments as a percentage of total establishments	4.5%	8.0%	5.9%
2.1.E	Number of Small Business Innovation Research (SBIR) awards per 10,000 business establishments	1.4	7.0	8.1
2.1.F	Number of *Inc. Magazine's* best 500 companies per 10,000 business establishments	0.69	1.00	0.71
2.2.A	Industry-performed R&D per $1,000 gross state product	$10.58	$15.00	$18.97
2.2.B	Federally-performed R&D expenditures per $1,000 gross state product	$.25	$2.50	$1.49
2.2.C	University-performed R&D expenditures per $1,000 gross state product	$3.43	$5.00	$3.01
2.2.D	Percentage of recent science and engineering Ph.D.s in the workforce	0.11%	0.14%	0.14%
2.2.E	Number of patents issued per 10,000 business establishments	70	85	137
2.2.F	Number of patent attorneys and agents per 10,000 business establishments	23	25	35
2.3.A	Venture capital disbursements, in millions	$169.5	$1,000	$21,086.8
2.3.B	Small Business Investment Companies (SBIC) awards	272	300	19472
2.3 C	Small Business Administration 7(a) business loans	1228	850	1345
2.3.D	Number of Small Business Development Centers, per 10,000 establishments	0.7	1.5	.7
2.3.E	Minority-owned firms as a percentage of total businesses	11%	15%	15%
2.3.F	Women-owned firms as a percentage of total businesses	25%	28%	26%
2.4.A	Merchandise exports as a share of gross state product	4.0%	8.0%	7.4%
2.4.B	Firms that export per 1,000 firms	34.3	35.0	33.6%
2.4.C	Number of foreign students enrolled in U.S. colleges and universities, per 10,000 student population	18.20	18.00	20.85
2.4.D	Number of U.S. college and university students enrolled in foreign study programs, per 10,000 population	5.35	5.00	5.73
2.4.E	Foreign direct investment per capita	$2,702	$3,500	$3,866

Benchmark		Current Data	Target	U.S. Average
1.1.A	Percentage of math teachers with major or minor in assigned field, grades 9-12	54.8%	82%	69.5%
1.1.B	Percentage of science teachers with major or minor in assigned field, grades 9-12	NA	82%	76.4%
1.1.C	Percentage of fourth graders at or above the proficient standard in reading on the NAEP	32%	34%	29%
1.1.D	Percentage of eighth graders at or above the proficient standard in reading on the NAEP	31%	34%	30%
1.1.E	Percentage of fourth graders at or above the proficient standard in math on the NAEP	41%	28%	31%
1.1.F	Percentage of eighth graders at or above the proficient standard in math on the NAEP	32%	32%	27%
1.1.G A	Percentage of eighth graders at or above the proficient standard in science on the NAEP	24%	NA	28%
1.1.G B	Percentage of eighth graders at or above the proficient standard in science on the NAEP	27%	35%	30%
1.1.H	Percentage of eighth graders at or above the proficient standard in writing on the NAEP	34%	27%	30%
1.1.I	Average SAT scores — verbal	493	543	504
1.1.J	Average SAT scores — math	505	590	516
1.1.K	Average composite scores on the ACT, American College Testing program, college admission exam	19.9	22.0	20.8
1.2.A	Associate's degrees granted as a percentage of the 18-24-year-old population	1.67%	3.00%	2.09%
1.2.B	Bachelor's degrees granted as percent of 18-24 population	4.37%	6.40%	4.55%
1.2.C	Percentage of 18-24 year olds enrolling in college	31%	36%	NA
1.2.D	First-time, full-time students completing a bachelor's degree within five years	57%	60%	NA
1.3.C	Percentage of population 25 years old and older with a high-school diploma or higher	78.1%	85.0%	80.4%
1.3.D	Percent of population scoring at level 1 on National Adult Literacy Survey	22%	19%	22%
1.3.E	Total fall college enrollment rates as a percentage of total population	4.9%	6.0%	5.3%
1.4.A	Percentage of bachelor's degrees granted in science and engineering	17.7%	20.0%	17.3%
1.4.B	Percentage of civilian workforce with a recent bachelor's degree in science or engineering	2.43%	1.97%	1.42%
1.4.C	Average weighted scores for 11th graders on Advanced Placement exams in math and science	3.08	3.6	3.16
1.5.A	Percentage of African-American population 25 years old or older with a high school diploma or higher	58.1%	63.0%	63.1%
1.5.B	Percentage of Hispanic population 25 years old and older with a high school diploma or higher	71.0%	75.0%	49.8%
1.5.C	Percentage of Native American population 25 years old and older with a high school diploma or higher	51.5%	65.0%	65.5%
1.5.D	Percentage of African-American population 25 years old and older with a bachelor's degree or higher	9.5%	11.0%	11.4%
1.5.E	Percentage of Hispanic population 25 years old or older with a bachelor's degree or higher	17.9%	21.0%	9.2%
1.5.F	Percentage of Native American population 25 years old and older with a bachelor's degree or higher	7.9%	10.0%	9.3%
1.6.A	Students per Internet-connected computer	6.5	6.0	5.6
1.6.B	Percentage of households with computers	50.1%	80.0%	56.5%
1.6.C	Percentage of households with Internet access	44.5%	80.0%	50.5%
1.6.D	Percentage of ZIP codes with broadband providers	97%	85%	88%

Benchmark		Current Data	Target	U.S. Average
2.1.C	Technology-intensive employment as a percentage of total employment	8.0%	12.0%	8.9%
2.1.D	Technology-intensive establishments as a percentage of total establishments	5.2%	9.5%	5.9%
2.1.E	Number of Small Business Innovation Research (SBIR) awards per 10,000 business establishments	2.8	10	8.1
2.1.F	Number of *Inc. Magazine's* best 500 companies per 10,000 business establishments	0.39	1.20	0.71
2.2.A	Industry-performed R&D per $1,000 gross state product	$13.03	$19.50	$18.97
2.2.B	Federally-performed R&D expenditures per $1,000 gross state product	$.93	$1.32	$1.49
2.2.C	University-performed R&D expenditures per $1,000 gross state product	$3.69	$6.00	$3.01
2.2.D	Percentage of recent science and engineering Ph.D.s in the workforce	0.14%	0.10	0.14%
2.2.E	Number of patents issued per 10,000 business establishments	105	93	137
2.2.F	Number of patent attorneys and agents per 10,000 business establishments	21	20	35
2.3.A	Venture capital disbursements, in millions	$547.5	$1,000	$21,086.8
2.3.B	Small Business Investment Companies (SBIC) awards	273	250	19472
2.3 C	Small Business Administration 7(a) business loans	862	850	1345
2.3.D	Number of Small Business Development Centers, per 10,000 establishments	1.3	1.2	.7
2.3.E	Minority-owned firms as a percentage of total businesses	11%	18%	15%
2.3.F	Women-owned firms as a percentage of total businesses	25%	30%	26%
2.4.A	Merchandise exports as a share of gross state product	5.7%	8.0%	7.4%
2.4.B	Firms that export per 1,000 firms	42.0	50.0	33.6%
2.4.C	Number of foreign students enrolled in U.S. colleges and universities, per 10,000 student population	10.68	15.00	20.85
2.4.D	Number of U.S. college and university students enrolled in foreign study programs, per 10,000 population	7.04	8.00	5.73
2.4.E	Foreign direct investment per capita	$2,865	$4,000	$3,866

Benchmark		Current Data	Target	U.S. Average
1.1.A	Percentage of math teachers with major or minor in assigned field, grades 9-12	73.1%	85%	69.5%
1.1.B	Percentage of science teachers with major or minor in assigned field, grades 9-12	71.4%	90%	76.4%
1.1.C	Percentage of fourth graders at or above the proficient standard in reading on the NAEP	26%	50%	29%
1.1.D	Percentage of eighth graders at or above the proficient standard in reading on the NAEP	27%	50%	30%
1.1.E	Percentage of fourth graders at or above the proficient standard in math on the NAEP	23%	35%	31%
1.1.F	Percentage of eighth graders at or above the proficient standard in math on the NAEP	20%	35%	27%
1.1.G A	Percentage of eighth graders at or above the proficient standard in science on the NAEP	26%	NA	28%
1.1.G B	Percentage of eighth graders at or above the proficient standard in science on the NAEP	26%	50%	30%
1.1.H	Percentage of eighth graders at or above the proficient standard in writing on the NAEP	27%	40%	30%
1.1.I	Average SAT scores — verbal	565	575	504
1.1.J	Average SAT scores — math	562	575	516
1.1.K	Average composite scores on the ACT, American College Testing program, college admission exam	20.5	21.5	20.8
1.2.A	Associate's degrees granted as a percentage of the 18-24-year-old population	1.79%	2.50%	2.09%
1.2.B	Bachelor's degrees granted as percent of 18-24 population	4.36%	6.00%	4.55%
1.2.C	Percentage of 18-24 year olds enrolling in college	28%	42%	NA
1.2.D	First-time, full-time students completing a bachelor's degree within five years	39%	50%	NA
1.3.C	Percentage of population 25 years old and older with a high-school diploma or higher	80.6%	88.0%	80.4%
1.3.D	Percent of population scoring at level 1 on National Adult Literacy Survey	18%	15%	22%
1.3.E	Total fall college enrollment rates as a percentage of total population	5.1%	6.0%	5.3%
1.4.A	Percentage of bachelor's degrees granted in science and engineering	17.5%	20.0%	17.3%
1.4.B	Percentage of civilian workforce with a recent bachelor's degree in science or engineering	1.50%	1.50%	1.42%
1.4.C	Average weighted scores for 11th graders on Advanced Placement exams in math and science	2.60	3.6	3.16
1.5.A	Percentage of African-American population 25 years old or older with a high school diploma or higher	70.1%	75.0%	63.1%
1.5.B	Percentage of Hispanic population 25 years old and older with a high school diploma or higher	55.9%	65.0%	49.8%
1.5.C	Percentage of Native American population 25 years old and older with a high school diploma or higher	68.1%	75.0%	65.5%
1.5.D	Percentage of African-American population 25 years old and older with a bachelor's degree or higher	12.0%	20.0%	11.4%
1.5.E	Percentage of Hispanic population 25 years old or older with a bachelor's degree or higher	10.5%	18.0%	9.2%
1.5.F	Percentage of Native American population 25 years old and older with a bachelor's degree or higher	10.8%	18.0%	9.3%
1.6.A	Students per Internet-connected computer	5.2	2.0	5.6
1.6.B	Percentage of households with computers	49.9%	70.0%	56.5%
1.6.C	Percentage of households with Internet access	43.8%	70.0%	50.5%
1.6.D	Percentage of ZIP codes with broadband providers	85%	70%	88%

Benchmark		Current Data	Target	U.S. Average
2.1.C	Technology-intensive employment as a percentage of total employment	7.2%	10.0%	8.9%
2.1.D	Technology-intensive establishments as a percentage of total establishments	4.4%	10.0%	5.9%
2.1.E	Number of Small Business Innovation Research (SBIR) awards per 10,000 business establishments	1.6	12	8.1
2.1.F	Number of *Inc. Magazine's* best 500 companies per 10,000 business establishments	0.47	1.00	0.71
2.2.A	Industry-performed R&D per $1,000 gross state product	$3.63	$15.00	$18.97
2.2.B	Federally-performed R&D expenditures per $1,000 gross state product	$.64	$5.00	$1.49
2.2.C	University-performed R&D expenditures per $1,000 gross state product	$2.75	$6.00	$3.01
2.2.D	Percentage of recent science and engineering Ph.D.s in the workforce	0.09%	0.15%	0.14%
2.2.E	Number of patents issued per 10,000 business establishments	70	70	137
2.2.F	Number of patent attorneys and agents per 10,000 business establishments	15	18	35
2.3.A	Venture capital disbursements, in millions	$50.5	$150	$21,086.8
2.3.B	Small Business Investment Companies (SBIC) awards	80	100	19472
2.3 C	Small Business Administration 7(a) business loans	639	700	1345
2.3.D	Number of Small Business Development Centers, per 10,000 establishments	0.6	2.5	.7
2.3.E	Minority-owned firms as a percentage of total businesses	10%	15%	15%
2.3.F	Women-owned firms as a percentage of total businesses	24%	30%	26%
2.4.A	Merchandise exports as a share of gross state product	2.9%	7.5%	7.4%
2.4.B	Firms that export per 1,000 firms	29.9	35.0	33.6%
2.4.C	Number of foreign students enrolled in U.S. colleges and universities, per 10,000 student population	26.16	24.00	20.85
2.4.D	Number of U.S. college and university students enrolled in foreign study programs, per 10,000 population	2.70	5.0	5.73
2.4.E	Foreign direct investment per capita	$2,301	$3,800	$3,866

	Benchmark	Current Data	Target	U.S. Average
1	Fall college enrollment in degree-granting institutions, as a percentage of 20-24 year-old population	67%	68%	82%
2	Percentage of civilian workforce with a recent bachelor's degree in science or engineering	0.90%	0.81%	1.29%
3	Percentage of civilian workforce with a recent master's degree in science or engineering	0.11%	0.16%	0.28%
4	Percentage of civilian workforce with a recent PhD degree in science or engineering	0.04%	0.06%	0.11%
5	Merchandise exports as a share of Gross State Product (GSP)	NA	20.0%	7.40%
6	Gross National Product per capita	$12,239	$22,000	$36,158
7	FDI per capita	NA	$1,500	$3,641
8	Personal per capita income	$11,279	$20,000	$30,069
9	Average annual number of Small Business Innovation Research (SBIR) awards per 10,000 establishments	.20	1.6	3.6
10	Average annual Small Business Innovation Research award dollars per $1,000 of GSP	.00	$0.03	$0.06
11	Average annual number of Small Business Investment Companies (SBIC) funds disbursed per $1,000 of GSP	.09	$0.15	$0.33
12	R&D expenditures as a percentage of Gross National Product	NA	1.00%	2.59%
13	Industrial R&D per $1,000 of Gross State Product	NA	$8.00	$12.02
14	Academic R&D per $1,000 of Gross State Product	1.44	$2.00	$2.89
15	Federal R&D obligations per $1,000 of Gross State Product	.24	$3.00	$4.52
16	High technology employment	36,270	50,000	102,267
17	High technology establishments	867	2,100	4,193
18	High technology wages	$33,670	$36,000	$64,683

Benchmark		Current Data	Target	U.S. Average
1.1.A	Percentage of math teachers with major or minor in assigned field, grades 9-12	73.1%	94%	69.5%
1.1.B	Percentage of science teachers with major or minor in assigned field, grades 9-12	NA	85%	76.4%
1.1.C	Percentage of fourth graders at or above the proficient standard in reading on the NAEP	25%	35%	29%
1.1.D	Percentage of eighth graders at or above the proficient standard in reading on the NAEP	24%	38%	30%
1.1.E	Percentage of fourth graders at or above the proficient standard in math on the NAEP	32%	27%	31%
1.1.F	Percentage of eighth graders at or above the proficient standard in math on the NAEP	26%	29%	27%
1.1.G A	Percentage of eighth graders at or above the proficient standard in science on the NAEP	21%	NA	28%
1.1.G B	Percentage of eighth graders at or above the proficient standard in science on the NAEP	20%	32%	30%
1.1.H	Percentage of eighth graders at or above the proficient standard in writing on the NAEP	20%	34%	30%
1.1.I	Average SAT scores — verbal	488	584	504
1.1.J	Average SAT scores — math	493	582	516
1.1.K	Average composite scores on the ACT, American College Testing program, college admission exam	19.2	24.0	20.8
1.2.A	Associate's degrees granted as a percentage of the 18-24-year-old population	1.67%	5.00%	2.09%
1.2.B	Bachelor's degrees granted as percent of 18-24 population	3.93%	6.00%	4.55%
1.2.C	Percentage of 18-24 year olds enrolling in college	37%	NA	NA
1.2.D	First-time, full-time students completing a bachelor's degree within five years	52%	NA	NA
1.3.C	Percentage of population 25 years old and older with a high-school diploma or higher	76.3%	88.0%	80.4%
1.3.D	Percent of population scoring at level 1 on National Adult Literacy Survey	25%	15%	22%
1.3.E	Total fall college enrollment rates as a percentage of total population	4.5%	6.0%	5.3%
1.4.A	Percentage of bachelor's degrees granted in science and engineering	16.5%	20.0%	17.3%
1.4.B	Percentage of civilian workforce with a recent bachelor's degree in science or engineering	1.32%	1.90%	1.42%
1.4.C	Average weighted scores for 11th graders on Advanced Placement exams in math and science	3.05	4.0	3.16
1.5.A	Percentage of African-American population 25 years old or older with a high school diploma or higher	53.3%	70.0%	63.1%
1.5.B	Percentage of Hispanic population 25 years old and older with a high school diploma or higher	71.8%	78.0%	49.8%
1.5.C	Percentage of Native American population 25 years old and older with a high school diploma or higher	62.5%	73.0%	65.5%
1.5.D	Percentage of African-American population 25 years old and older with a bachelor's degree or higher	7.6%	15.0%	11.4%
1.5.E	Percentage of Hispanic population 25 years old or older with a bachelor's degree or higher	19.8%	24.0%	9.2%
1.5.F	Percentage of Native American population 25 years old and older with a bachelor's degree or higher	10.9%	18.0%	9.3%
1.6.A	Students per Internet-connected computer	4.8	5.0	5.6
1.6.B	Percentage of households with computers	52.2%	60.0%	56.5%
1.6.C	Percentage of households with Internet access	45.0%	53.0%	50.5%
1.6.D	Percentage of ZIP codes with broadband providers	92%	90%	88%

	Benchmark	Current Data	Target	U.S. Average
2.1.C	Technology-intensive employment as a percentage of total employment	8.8%	15%	8.9%
2.1.D	Technology-intensive establishments as a percentage of total establishments	4.3	10%	5.9%
2.1.E	Number of Small Business Innovation Research (SBIR) awards per 10,000 business establishments	1.6	6.0	8.1
2.1.F	Number of *Inc. Magazine's* best 500 companies per 10,000 business establishments	0.21	1.00	0.71
2.2.A	Industry-performed R&D per $1,000 gross state product	$6.89	$20.00	$18.97
2.2.B	Federally-performed R&D expenditures per $1,000 gross state product	$.40	$1.50	$1.49
2.2.C	University-performed R&D expenditures per $1,000 gross state product	$2.59	$5.00	$3.01
2.2.D	Percentage of recent science and engineering Ph.D.s in the workforce	0.07%	0.10%	0.14%
2.2.E	Number of patents issued per 10,000 business establishments	66	90	137
2.2.F	Number of patent attorneys and agents per 10,000 business establishments	13	18	35
2.3.A	Venture capital disbursements, in millions	$5.0	$1,000	$21,086.8
2.3.B	Small Business Investment Companies (SBIC) awards	80	110	19472
2.3 C	Small Business Administration 7(a) business loans	486	380	1345
2.3.D	Number of Small Business Development Centers, per 10,000 establishments	0.6	3.0	.7
2.3.E	Minority-owned firms as a percentage of total businesses	12%	20%	15%
2.3.F	Women-owned firms as a percentage of total businesses	25%	33%	26%
2.4.A	Merchandise exports as a share of gross state product	9.1%	13%	7.4%
2.4.B	Firms that export per 1,000 firms	45.9	44.0	33.6%
2.4.C	Number of foreign students enrolled in U.S. colleges and universities, per 10,000 student population	5.67	10.00	20.85
2.4.D	Number of U.S. college and university students enrolled in foreign study programs, per 10,000 population	2.68	5.00	5.73
2.4.E	Foreign direct investment per capita	$3,314	$5,000	$3,866

Benchmark		Current Data	Target	U.S. Average
1.1.A	Percentage of math teachers with major or minor in assigned field, grades 9-12	59.5%	75%	69.5%
1.1.B	Percentage of science teachers with major or minor in assigned field, grades 9-12	58%	75%	76.4%
1.1.C	Percentage of fourth graders at or above the proficient standard in reading on the NAEP	26%	30%	29%
1.1.D	Percentage of eighth graders at or above the proficient standard in reading on the NAEP	28%	30%	30%
1.1.E	Percentage of fourth graders at or above the proficient standard in math on the NAEP	24%	20%	31%
1.1.F	Percentage of eighth graders at or above the proficient standard in math on the NAEP	21%	20%	27%
1.1.G A	Percentage of eighth graders at or above the proficient standard in science on the NAEP	26%	NA	28%
1.1.G B	Percentage of eighth graders at or above the proficient standard in science on the NAEP	25%	28%	30%
1.1.H	Percentage of eighth graders at or above the proficient standard in writing on the NAEP	24%	26%	30%
1.1.I	Average SAT scores — verbal	562	568	504
1.1.J	Average SAT scores — math	555	558	516
1.1.K	Average composite scores on the ACT, American College Testing program, college admission exam	20.0	22.0	20.8
1.2.A	Associate's degrees granted as a percentage of the 18-24-year-old population	1.4%	1.80%	2.09%
1.2.B	Bachelor's degrees granted as percent of 18-24 population	4.18%	4.30%	4.55%
1.2.C	Percentage of 18-24 year olds enrolling in college	32%	30%	NA
1.2.D	First-time, full-time students completing a bachelor's degree within five years	47%	48%	NA
1.3.C	Percentage of population 25 years old and older with a high-school diploma or higher	75.9%	80.0%	80.4%
1.3.D	Percent of population scoring at level 1 on National Adult Literacy Survey	21%	23%	22%
1.3.E	Total fall college enrollment rates as a percentage of total population	4.6%	7.0%	5.3%
1.4.A	Percentage of bachelor's degrees granted in science and engineering	16.0%	17.0%	17.3%
1.4.B	Percentage of civilian workforce with a recent bachelor's degree in science or engineering	1.09%	1.90%	1.42%
1.4.C	Average weighted scores for 11th graders on Advanced Placement exams in math and science	3.08	3.6	3.16
1.5.A	Percentage of African-American population 25 years old or older with a high school diploma or higher	59.4%	62.0%	63.1%
1.5.B	Percentage of Hispanic population 25 years old and older with a high school diploma or higher	71.5%	72.5%	49.8%
1.5.C	Percentage of Native American population 25 years old and older with a high school diploma or higher	63.1%	65.0%	65.5%
1.5.D	Percentage of African-American population 25 years old and older with a bachelor's degree or higher	10.2%	12.0%	11.4%
1.5.E	Percentage of Hispanic population 25 years old or older with a bachelor's degree or higher	21.9%	23.0%	9.2%
1.5.F	Percentage of Native American population 25 years old and older with a bachelor's degree or higher	10.5%	12.0%	9.3%
1.6.A	Students per Internet-connected computer	6.2	7.0	5.6
1.6.B	Percentage of households with computers	51.3%	47.0%	56.5%
1.6.C	Percentage of households with Internet access	44.8%	37.0%	50.5%
1.6.D	Percentage of ZIP codes with broadband providers	94%	70%	88%

Benchmark		Current Data	Target	U.S. Average
2.1.C	Technology-intensive employment as a percentage of total employment	8.2%	8.0%	8.9%
2.1.D	Technology-intensive establishments as a percentage of total establishments	4.2%	4.1%	5.9%
2.1.E	Number of Small Business Innovation Research (SBIR) awards per 10,000 business establishments	3.0	4.0	8.1
2.1.F	Number of *Inc. Magazine's* best 500 companies per 10,000 business establishments	0.61	0.80	0.71
2.2.A	Industry-performed R&D per $1,000 gross state product	$6.81	$13.00	$18.97
2.2.B	Federally-performed R&D expenditures per $1,000 gross state product	$.50	$0.44	$1.49
2.2.C	University-performed R&D expenditures per $1,000 gross state product	$2.27	$2.25	$3.01
2.2.D	Percentage of recent science and engineering Ph.D.s in the workforce	0.08%	0.08%	0.14%
2.2.E	Number of patents issued per 10,000 business establishments	75	62	137
2.2.F	Number of patent attorneys and agents per 10,000 business establishments	10	10	35
2.3.A	Venture capital disbursements, in millions	$82.5	$200	$21,086.8
2.3.B	Small Business Investment Companies (SBIC) awards	232	130	19472
2.3 C	Small Business Administration 7(a) business loans	509	420	1345
2.3.D	Number of Small Business Development Centers, per 10,000 establishments	0.7	1.0	.7
2.3.E	Minority-owned firms as a percentage of total businesses	8%	9%	15%
2.3.F	Women-owned firms as a percentage of total businesses	24%	25%	26%
2.4.A	Merchandise exports as a share of gross state product	7.0%	6.8%	7.4%
2.4.B	Firms that export per 1,000 firms	41.9	38.5	33.6%
2.4.C	Number of foreign students enrolled in U.S. colleges and universities, per 10,000 student population	10.00	9.50	20.85
2.4.D	Number of U.S. college and university students enrolled in foreign study programs, per 10,000 population	3.79	3.00	5.73
2.4.E	Foreign direct investment per capita	$3,749	$3,500	$3,866

Benchmark		Current Data	Target	U.S. Average
1.1.A	Percentage of math teachers with major or minor in assigned field, grades 9-12	56.6%	70%	69.5%
1.1.B	Percentage of science teachers with major or minor in assigned field, grades 9-12	76.8%	93%	76.4%
1.1.C	Percentage of fourth graders at or above the proficient standard in reading on the NAEP	37%	32%	29%
1.1.D	Percentage of eighth graders at or above the proficient standard in reading on the NAEP	37%	35%	30%
1.1.E	Percentage of fourth graders at or above the proficient standard in math on the NAEP	36%	21%	31%
1.1.F	Percentage of eighth graders at or above the proficient standard in math on the NAEP	31%	23%	27%
1.1.G A	Percentage of eighth graders at or above the proficient standard in science on the NAEP	33%	NA	28%
1.1.G B	Percentage of eighth graders at or above the proficient standard in science on the NAEP	31%	29%	30%
1.1.H	Percentage of eighth graders at or above the proficient standard in writing on the NAEP	32%	29%	30%
1.1.I	Average SAT scores — verbal	510	525	504
1.1.J	Average SAT scores — math	506	516	516
1.1.K	Average composite scores on the ACT, American College Testing program, college admission exam	20.6	21.2	20.8
1.2.A	Associate's degrees granted as a percentage of the 18-24-year-old population	1.69%	2.29%	2.09%
1.2.B	Bachelor's degrees granted as percent of 18-24 population	4.95%	5.25%	4.55%
1.2.C	Percentage of 18-24 year olds enrolling in college	31%	36%	NA
1.2.D	First-time, full-time students completing a bachelor's degree within five years	59%	61%	NA
1.3.C	Percentage of population 25 years old and older with a high-school diploma or higher	81.5%	84.6%	80.4%
1.3.D	Percent of population scoring at level 1 on National Adult Literacy Survey	19%	19%	22%
1.3.E	Total fall college enrollment rates as a percentage of total population	5.2%	5.0%	5.3%
1.4.A	Percentage of bachelor's degrees granted in science and engineering	19.2%	20.3%	17.3%
1.4.B	Percentage of civilian workforce with a recent bachelor's degree in science or engineering	1.43%	1.62%	1.42%
1.4.C	Average weighted scores for 11th graders on Advanced Placement exams in math and science	3.29	3.6	3.16
1.5.A	Percentage of African-American population 25 years old or older with a high school diploma or higher	60.3%	62.3%	63.1%
1.5.B	Percentage of Hispanic population 25 years old and older with a high school diploma or higher	70.5%	72.5%	49.8%
1.5.C	Percentage of Native American population 25 years old and older with a high school diploma or higher	70.5%	72.5%	65.5%
1.5.D	Percentage of African-American population 25 years old and older with a bachelor's degree or higher	11.1%	11.6%	11.4%
1.5.E	Percentage of Hispanic population 25 years old or older with a bachelor's degree or higher	22.4%	22.9%	9.2%
1.5.F	Percentage of Native American population 25 years old and older with a bachelor's degree or higher	14.7%	15.2%	9.3%
1.6.A	Students per Internet-connected computer	4.9	6.5	5.6
1.6.B	Percentage of households with computers	58.8%	58.9%	56.5%
1.6.C	Percentage of households with Internet access	54.9%	49.3%	50.5%
1.6.D	Percentage of ZIP codes with broadband providers	87%	74%	88%

Benchmark		Current Data	Target	U.S. Average
2.1.C	Technology-intensive employment as a percentage of total employment	11.7%	10.7%	8.9%
2.1.D	Technology-intensive establishments as a percentage of total establishments	7.7%	7.3%	5.9%
2.1.E	Number of Small Business Innovation Research (SBIR) awards per 10,000 business establishments	14.1	15.3	8.1
2.1.F	Number of *Inc. Magazine's* best 500 companies per 10,000 business establishments	1.54	1.70	0.71
2.2.A	Industry-performed R&D per $1,000 gross state product	$10.40	$11.96	$18.97
2.2.B	Federally-performed R&D expenditures per $1,000 gross state product	$5.55	$7.50	$1.49
2.2.C	University-performed R&D expenditures per $1,000 gross state product	$2.25	$2.25	$3.01
2.2.D	Percentage of recent science and engineering Ph.D.s in the workforce	0.13%	0.12%	0.14%
2.2.E	Number of patents issued per 10,000 business establishments	71	64	137
2.2.F	Number of patent attorneys and agents per 10,000 business establishments	80	68	35
2.3.A	Venture capital disbursements, in millions	$395.7	$1,386	$21,086.8
2.3.B	Small Business Investment Companies (SBIC) awards	356	166	19472
2.3 C	Small Business Administration 7(a) business loans	855	600	1345
2.3.D	Number of Small Business Development Centers, per 10,000 establishments	0.5	1.6	.7
2.3.E	Minority-owned firms as a percentage of total businesses	15%	15%	15%
2.3.F	Women-owned firms as a percentage of total businesses	28%	28%	26%
2.4.A	Merchandise exports as a share of gross state product	4.6%	6.1%	7.4%
2.4.B	Firms that export per 1,000 firms	34.3	30.1	33.6%
2.4.C	Number of foreign students enrolled in U.S. colleges and universities, per 10,000 student population	18.19	17.00	20.85
2.4.D	Number of U.S. college and university students enrolled in foreign study programs, per 10,000 population	8.12	6.00	5.73
2.4.E	Foreign direct investment per capita	$3,030	$3,028	$3,866

Benchmark		Current Data	Target	U.S. Average
1.1.A	Percentage of math teachers with major or minor in assigned field, grades 9-12	NA	75%	69.5%
1.1.B	Percentage of science teachers with major or minor in assigned field, grades 9-12	NA	80%	76.4%
1.1.C	Percentage of fourth graders at or above the proficient standard in reading on the NAEP	28%	33%	29%
1.1.D	Percentage of eighth graders at or above the proficient standard in reading on the NAEP	29%	32%	30%
1.1.E	Percentage of fourth graders at or above the proficient standard in math on the NAEP	24%	24%	31%
1.1.F	Percentage of eighth graders at or above the proficient standard in math on the NAEP	20%	21%	27%
1.1.G A	Percentage of eighth graders at or above the proficient standard in science on the NAEP	25%	NA	28%
1.1.G B	Percentage of eighth graders at or above the proficient standard in science on the NAEP	26%	27%	30%
1.1.H	Percentage of eighth graders at or above the proficient standard in writing on the NAEP	21%	25%	30%
1.1.I	Average SAT scores — verbal	525	545	504
1.1.J	Average SAT scores — math	515	545	516
1.1.K	Average composite scores on the ACT, American College Testing program, college admission exam	20.3	23.0	20.8
1.2.A	Associate's degrees granted as a percentage of the 18-24-year-old population	1.77%	2.50%	2.09%
1.2.B	Bachelor's degrees granted as percent of 18-24 population	4.96%	5.00%	4.55%
1.2.C	Percentage of 18-24 year olds enrolling in college	31%	40%	NA
1.2.D	First-time, full-time students completing a bachelor's degree within five years	38%	50%	NA
1.3.C	Percentage of population 25 years old and older with a high-school diploma or higher	75.2	80.0%	80.4%
1.3.D	Percent of population scoring at level 1 on National Adult Literacy Survey	20%	18%	22%
1.3.E	Total fall college enrollment rates as a percentage of total population	4.9%	8.0%	5.3%
1.4.A	Percentage of bachelor's degrees granted in science and engineering	15.4%	16.5%	17.3%
1.4.B	Percentage of civilian workforce with a recent bachelor's degree in science or engineering	0.42%	1.00%	1.42%
1.4.C	Average weighted scores for 11th graders on Advanced Placement exams in math and science	2.75	3.5	3.16
1.5.A	Percentage of African-American population 25 years old or older with a high school diploma or higher	64.7%	67.5%	63.1%
1.5.B	Percentage of Hispanic population 25 years old and older with a high school diploma or higher	70.3%	73.0%	49.8%
1.5.C	Percentage of Native American population 25 years old and older with a high school diploma or higher	70.3%	65.0%	65.5%
1.5.D	Percentage of African-American population 25 years old and older with a bachelor's degree or higher	10.9%	11.5%	11.4%
1.5.E	Percentage of Hispanic population 25 years old or older with a bachelor's degree or higher	17.6%	20.0%	9.2%
1.5.F	Percentage of Native American population 25 years old and older with a bachelor's degree or higher	6.5%	8.0%	9.3%
1.6.A	Students per Internet-connected computer	4.9	4.5	5.6
1.6.B	Percentage of households with computers	48.0%	50.0%	56.5%
1.6.C	Percentage of households with Internet access	40.7%	40.0%	50.5%
1.6.D	Percentage of ZIP codes with broadband providers	73%	75%	88%

Benchmark		Current Data	Target	U.S. Average
2.1.C	Technology-intensive employment as a percentage of total employment	5.7%	6.5%	8.9%
2.1.D	Technology-intensive establishments as a percentage of total establishments	3.0%	4.0%	5.9%
2.1.E	Number of Small Business Innovation Research (SBIR) awards per 10,000 business establishments	1.9	3.0	8.1
2.1.F	Number of *Inc. Magazine's* best 500 companies per 10,000 business establishments	0.0	0.50	0.71
2.2.A	Industry-performed R&D per $1,000 gross state product	$5.56	$10.00	$18.97
2.2.B	Federally-performed R&D expenditures per $1,000 gross state product	$2.44	$4.00	$1.49
2.2.C	University-performed R&D expenditures per $1,000 gross state product	$1.74	$3.00	$3.01
2.2.D	Percentage of recent science and engineering Ph.D.s in the workforce	0.07%	0.10%	0.14%
2.2.E	Number of patents issued per 10,000 business establishments	39	60	137
2.2.F	Number of patent attorneys and agents per 10,000 business establishments	4	8	35
2.3.A	Venture capital disbursements, in millions	$17.9	$100	$21,086.8
2.3.B	Small Business Investment Companies (SBIC) awards	57	55	19472
2.3 C	Small Business Administration 7(a) business loans	207	350	1345
2.3.D	Number of Small Business Development Centers, per 10,000 establishments	0.3	2.0	.7
2.3.E	Minority-owned firms as a percentage of total businesses	4%	10%	15%
2.3.F	Women-owned firms as a percentage of total businesses	27%	30%	26%
2.4.A	Merchandise exports as a share of gross state product	5.6%	8.0%	7.4%
2.4.B	Firms that export per 1,000 firms	19.6	25.0	33.6%
2.4.C	Number of foreign students enrolled in U.S. colleges and universities, per 10,000 student population	12.02	17.00	20.85
2.4.D	Number of U.S. college and university students enrolled in foreign study programs, per 10,000 population	2.73	4.00	5.73
2.4.E	Foreign direct investment per capita	$3,942	$4,000	$3,866

Benchmark 1.1A
Qualifications of the Public School Teacher Workforce: Prevalence of Out-of-Field Teaching, 1987-1988 to 1999-2000, National Center of Education Statistics, May 31, 2002, [cited November, 2003], Available on the World Wide Web at (http://nces.ed.gov/pubs2002/2002603_tables.pdf. Tables 20-A and 21-A).

Data include teachers who taught grades 5-9 and expresses limitations due to reporting standards not met for some states. Interpret data with caution.

This benchmark has not been updated for the 2004 report.

Benchmark 1.1B
Ibid.

This benchmark has not been updated for the 2004 report.

Benchmark 1.1C
National Assessment of Educational Progress-2003, The Nation's Report Card, National Center of Education Statistics, November 17, 2003, [cited December, 2003], Available on the World Wide Web at (http://nces.ed.gov/nationsreportcard/reading/results2002/stateachieve-g4.asp).

Benchmark 1.1D
National Assessment of Educational Progress-2003, The Nation's Report Card, National Center of Education Statistics, November 17, 2003, [cited December, 2003], Available on the World Wide Web at (http://nces.ed.gov/nationsreportcard/reading/results2002/stateachieve-g8.asp).

Benchmark 1.1E
National Assessment of Educational Progress-2003, The Nation's Report Card, National Center of Education Statistics, November 17, 2003, [cited December, 2003], Available on the World Wide Web at (http://nces.ed.gov/nationsreportcard/mathematics/results2003/stateavgscale-g4.asp).

Previous reports did not permit for accommodations, those with disabilities and limited-English proficiency, and differences in sample weighting procedures may affect comparison of results.

Benchmark 1.1F
National Assessment of Educational Progress-2003, The Nation's Report Card, National Center of Education Statistics, November 17, 2003, [cited December, 2003], Available on the World Wide Web at (http://nces.ed.gov/nationsreportcard/reading/results2002/stateachieve-g8.asp).
Previous reports did not permit for accommodations, those with disabilities and limited-English proficiency, and differences in sample weighting procedures may affect comparison of results.

Benchmark 1.1G (a)
National Assessment of Educational Progress-2003, The Nation's Report Card, National Center of Education Statistics, November 17, 2003, [cited December, 2003], Available on the World Wide Web at (http://nces.ed.gov/nationsreportcard/mathematics/results2003/stateavgscale-g4.asp).

Benchmark 1.1G (b)
National Assessment of Educational Progress-2003, The Nation's Report Card, National Center of Education Statistics, November 17, 2003, [cited December, 2003], Available on the World Wide Web at (http://nces.ed.gov/nationsreportcard/reading/results2002/stateachieve-g8.asp).

Benchmark 1.1H
Ibid.

Benchmark 1.1 I
College Board, The, *Table 3: Mean SAT I Verbal and Math Scores by State, with Changes for Selected Years, 2002,* [cited October, 2003], Available on the World Wide Web at (http://www.collegeboard.com/prod_downloads/about/news_info/cbsenior/yr2002/pdf/table3.pdf).

A perfect verbal or math score on the SAT is 800.

Benchmark 1.1J
Ibid.

Benchmark 1.1K
ACT, *2002 ACT National and State Scores. ACT Average Composite Scores by State,* [cited October, 2003], Available on the World Wide Web at (http://www.act.org/news/data/02/states.html).

A perfect score on the ACT exam is 36.

Benchmark 1.2A
The Dynamics of Technology-based Economic Development: State Science and Technology Indicators, *Third Edition*, April 2003. U.S. Department of Commerce, Office of Technology Policy, Technology Administration, [cited October, 2003], Available on the World Wide Web at (http://www.technology.gov/reports/TechPolicy/StateIndicators/2003_pt2.pdf).

The original data for this indicator can be found at these sources:

Associate's Degrees Granted: U.S. Department of Education, National Center for Education Statistics. Postsecondary Institution in the United States: Fall 2000 and Degrees and Other Awards Conferred: 1999-2000, *NCES 2003-156, by Laura G. Knapp et al. Project Officer: Susan G. Broyles. Washington, DC 2001.*

Population, 18-24 Years Old:
U.S. Census Bureau, American Factfinder-Census 2000 Summary File 2-Matrices PCT3 SEX BY AGE. *[cited June, 2002], Available on the World Wide Web at (http://factfinder.census.gov/servlet/DTTable?-ts+41948747704).*

Benchmark 1.2B
Ibid.

Benchmark 1.2C
The State-by-State Report Card for Higher Education: Measuring Up 2002, The National Center for Public Policy and Higher Education, 2002, [cited October, 2003], Available on the World Wide Web at (http://measuringup.highereducation.org/2002/reporthome).

Benchmark 1.2D
The State-by-State Report Card for Higher Education: Measuring Up 2002, The National Center for Public Policy and Higher Education, 2002, [cited October, 2003], Available on the World Wide Web at (http://measuringup.highereducation.org/2002/state_comparison.cfm).

Benchmark 1.3A
Dropped from the 2004 index.

Benchmark 1.3B
Dropped from the 2004 index.

Benchmark 1.3C
Language, School Enrollment Attainment: 2000, Census 2000 Summary File 3, U.S. Census Bureau, [cited October, 2003], Available on the World Wide Web at (http://factfinder.census.gov/servlet/GCTTable?_bm=y&geo_id=D&_box_head_nbr+GCTP11&ds_name=DEC_2000_SF4_U&_lang=en&redoLog=false&format=D).

Figures represent revised data from 2000 Census.

Benchmark 1.3D
The State of Literacy in America, National Institute for Literacy, 1990 data, [cited October, 2003], Available on the World Wide Web at (http://nces.ed.gov/naal/resources/reports.asp#top).

This benchmark has not been updated for the 2004 report.

Benchmark 1.3E
Integrated Postsecondary Education Data Systems (IPEDS), National Center for Education Statistics, Spring 2001, [cited October 2003], Available on the World Wide Web at (http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2003168).

State Population estimates-characteristics, U.S. Census, July 2002, [cited October, 2003], Available on the World Wide Web at (http://factfinder.census.gov/servlet/GCTTable?_bm=y&geo__id=D&ds_name=D&_lang=en&redoLong=false&mt_name=PEP_2003_EST_GCTT1R_US9S&format=ST-2S).

Benchmark 1.4A
The Dynamics of Technology-based Economic Development: State Science and Technology Indicators, *Third Edition*, April 2003, U.S. Department of Commerce, Office of Technology Policy, Technology Administration, [cited October, 2003], Available on the World Wide Web at (http://www.technology.gov/reports/TechPolicy/StateIndicators/2003_pt2.pdf).

The original data for this indicator can be found at these sources:

Science and Engineering Bachelor's Degrees Granted: Arrangements for special tabulations were made by Thomas Snyder, Program Director, Annual Reports Program-ECI-CSD, National Center for Education Statistics at (202) 502-7452 on March 4, 2002 per a special request from Taratec Corporation, Columbus, Ohio.

Total Bachelor's Degrees Granted: U.S. Department of Education, National Center for Education Statistics. Postsecondary Institutions in the United States: Fall 2000 and Degrees and Other Awards Conferred: 1999-2000, NCES 2002-156, by Laura G. Knapp, et al., Project Officer: Susan G. Broyles. Washington, DC 2001.

Benchmark 1.4B
The Dynamics of Technology-based Economic Development: State Science and Technology Indicators, *Third Edition*, April 2003, U.S. Department of Commerce, Office of Technology Policy, Technology Administration, [cited October, 2003], Available on the World Wide Web at (http://www.technology.gov/reports/TechPolicy/StateIndicators/2003_pt2.pdf).

The original data for this indicator can be found at these sources:

Recent Science and Engineering Bachelor's Degrees: Arrangements for the special tabulation of the 1999 SESTAT database were made by Kelly H. Kang, Senior Analyst, Science Resources Studies Division, National Science Foundation on April 24, 2001 per a special request from Taratec Corporation, Columbus, Ohio.

Civilian Labor Force: U.S. Department of Labor, Bureau of Labor Statistics. February 23, 2001. State and Regional Unemployment, 2000 Annual Averages. [cited March, 2001], Available on the World Wide Web at (ftp://146.142.4.23/pub/news.release/srgune.txt March 21, 2001).

This benchmark has not been updated for the 2004 report.

Benchmark 1.4C
College Board, The. *AP Central: 2002,* [cited October, 2003], Available on the World Wide Web at (http://apcentral.collegeboard.com/article/0,3045,150-156-0-19522,00.html).

This benchmark has not been updated for the 2004 report.

Benchmark 1.5A
Digest of Education Statistics 2000, 2001 Compendium, *Table 12*, National Center for Education Statistics, 1990 data, [cited May, 2001], Available on the World Wide Web at (http://www.nces.ed.gov/pubsearch/pubsinfo.asp?Pubid=2001034).

This benchmark has not been updated for the 2004 report.

Benchmark 1.5B
Ibid.

This benchmark has not been updated for the 2004 report.

Benchmark 1.5C
Ibid.

This benchmark has not been updated for the 2004 report.

Benchmark 1.5D
Ibid.

This benchmark has not been updated for the 2004 report.

Benchmark 1.5E
Ibid.

This benchmark has not been updated for the 2004 report.

Benchmark 1.5F
Ibid.

This benchmark has not been updated for the 2004 report.

Benchmark 1.6A
Technology Counts '03: Pencils Down: Technology's Answer to Testing. Education Week, 2002 report previously at:
(http://www.edweek.org/sreports/TC03/State_data_table2.cfm#access),
[cited October, 2003], Current Report Available on the World Wide Web at
(http://www.edweek.org/sreports/tc03/tables/35access-t1e.cfm).

Benchmark 1.6B
A Nation Online: How Americans are Expanding their Use of the Internet, U.S. Department of Commerce, Economics and Statistics Administration, National Telecommunications and Information Administration (NTIA), 2002 data, [cited March, 2002], Available on the World Wide Web at (http://www.ntia.doc.gov/ntiahome/dn/hhs/Table2.htm).

This benchmark has not been updated for the 2004 report.

Benchmark 1.6C
A Nation Online: How Americans are Expanding their Use of the Internet, U.S. Department of Commerce, Economics and Statistics Administration, National Telecommunications and Information Administration (NTIA), 2002 data, [cited March, 2002], Available on the World Wide Web at (http://www.ntia.doc.gov/ntiahome/dn/hhs/Table1.htm).

This benchmark has not been updated for the 2004 report.

Benchmark 1.6D
High-Speed Services for Internet Access: Subscribership as of December 31, 2002, Federal Communications Commission, Common Carrier Bureau, Industry Analysis Division, [cited February, 2004], Available on the World Wide Web at (http://www.fcc.gov/Bureaus/Common_Carrier/Reports/FCC-State_Link/IAD/hspd0603.pdf).

Benchmark 2.1A
Dropped from the 2004 index.

Benchmark 2.1B
Dropped from the 2004 index.

Benchmark 2.1C
The Dynamics of Technology-based Economic Development: State Science and Technology Indicators, *Third Edition*, April 2003, U.S. Department of Commerce, Office of Technology Policy, Technology Administration, [cited February, 2004], Available on the World Wide Web at (http://www.technology.gov/reports/TechPolicy/StateIndicators/2003_pt2.pdf).

The original data for this indicator can be found at these sources:

U.S. Census Bureau furnished the data for this metric from a special tabulation based upon the 6.9 million employer-establishments contained in the Standard Statistical Establishment List. This is the same database that is used to generate County Business Patterns. Arrangements for special tabulations can be made by contacting Trey Cole at the U.S. Census Bureau, Company Statistics Division in Washington, DC at (301) 457-3320.

High-technology definition: U.S. Department of Commerce

High-technology employment: These data were prepared by the U.S. Census Bureau under contract with Taratec Corporation, Columbus, Ohio.

Total employment: U.S. Census Bureau, County Business Patterns 1999. U.S. Government Printing Office, Washington, DC, 2001.

Note: The U.S. government is now using North American Industrial Classification (NAIC) codes instead of Standard Industrial Classification (SIC) codes and direct comparison to previous indexes should be approached with caution.

Benchmark 2.1D
Ibid.

Benchmark 2.1E
The Dynamics of Technology-based Economic Development: State Science and Technology Indicators, *Third Edition*, April 2003, U.S. Department of Commerce, Office of Technology Policy, Technology Administration, [cited February, 2004], Available on the World Wide Web at (http://www.technology.gov/reports/TechPolicy/StateIndicators/2003_pt3.pdf).

The original data for this indicator can be found at these sources:

SBIR Awards Granted: Small Business Administration. Technology-1999 SBIR State Chart, Available on the World Wide Web at (http://www.sba.gov/SBIR/sbir1999state.html).

Small Business Administration. Technology-2000 SBIR State Chart, Available on the World Wide Web at (http://www.sba.gov/SBIR/sbir2000state.html).

The 2001 SBIR data was provided by the Small Business Administration, Office of Technology per a special request from Taratec Corporation, Columbus, Ohio. Available on the World Wide Web at (http://www.sba.gov/SBIR/indexsbir-sttr.html).

U.S. Census Bureau. County Business Patterns-United States: 2000. Available on the World Wide Web at (http://www.census.gov/prod/2002pubs/00cbp/cbp00-1.pdf).

Benchmark 2.1F
"Best 500 Companies, 2001," Inc. Magazine (on-line), Available on the World Wide Web at (http://www.inc.com/inc500/search-last.html).

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This benchmark has not been updated for the 2004 report.

Benchmark 2.2A
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The original data for this indicator can be found at these sources:

Expenditures for Industry-performed R&D: Industry R&D was collected and compiled by the National Science Foundation, Division of Science Resources Studies, Available on the World Wide Web at (http://www.nsf.gov/sbe/srs/), Survey of Industrial Research and Development: 2000.

Gross State Product: U.S. Department of Commerce, Bureau of Economic Analysis (June 2002). Gross State Product: 2000, Available on the World Wide Web at (http://www.bea.doc.gov/bea/regional/gsp).

Benchmark 2.2B
Ibid.

Benchmark 2.2C
The Dynamics of Technology-based Economic Development: State Science and Technology Indicators, *Third Edition*, April 2003. U.S. Department of Commerce, Office of Technology Policy, Technology Administration, [cited February, 2004], Available on the World Wide Web at (http://www.technology.gov/reports/TechPolicy/StateIndicators/2003_pt1.pdf).

The original data for this indicator can be found at these sources:

Expenditures for University-performed R&D: National Science Foundation, Division of Science Resources Studies. Academic Research and Development Expenditures: Fiscal Year 2000, Arlington, VA.

Gross State Product: U.S. Department of Commerce, Bureau of Economic Analysis. Gross State Product: 2000, Available on the World Wide Web at (http://www.bea.doc.gov/bea/regional/gsp), Government of Puerto Rico, Office of the Governor. Appendix Statistics: Table 1-Selected of Income and Product, Total and Per Capita, Available on the World Wide Web at (http://www.jp.govierno.pr).

Benchmark 2.2D
The Dynamics of Technology-based Economic Development: State Science and Technology Indicators, *Third Edition*, April 2003. U.S. Department of Commerce, Office of Technology Policy, Technology Administration, [cited February, 2004], Available on the World Wide Web at (http://www.technology.gov/reports/TechPolicy/StateIndicators/2003_pt1.pdf).

The original data for this indicator can be found at these sources:

Recent Science and Engineering Ph.D. Degrees: Arrangements for the special tabulation of the 1999 SESTAT database were made by Kelly H. Kang, Senior Analyst, Science Resources Studies Division, National Science Foundation on April 24, 2001 per a special request from Taratec Corporation, Columbus, Ohio.

Civilian Labor Force: U.S. Department of Labor, Bureau of Labor Statistics. State and Regional Unemployment, 2000 Annual Averages, Available on the World Wide Web at (ftp://146.142.4.23/pub/news.release/srgune.txt).

This benchmark has not been updated for the 2004 report.

Benchmark 2.2E
The Dynamics of Technology-based Economic Development: State Science and Technology Indicators, *Third Edition*, April 2003. U.S. Department of Commerce, Office of Technology Policy, Technology Administration, [cited February, 2004], Available on the World Wide Web at (http://www.technology.gov/reports/TechPolicy/StateIndicators/2003_pt1.pdf).

The original data for this indicator can be found at these sources:

U.S. patents issued: U.S. Patent and Trademark Office, Information Products Division/TAF Branch, Dozier, G. Patent Counts by Country/State and Year, All Patents, All Types, January, 1 1977-December 31, 2001, Available on the World Wide Web at (http://www.uspto.gov/web/offices/ac/io/oeip/taf/cst_all.pdf).

Establishments: U.S. Census Bureau. County Business Patterns-United States: 2000, Available on the World Wide Web at (http://www.census.gov/prod/2002pubs/00cbp/cbp00-1.pdf).

Benchmark 2.2F
The Dynamics of Technology-based Economic Development: State Science and Technology Indicators, *Third Edition*, April 2003. U.S. Department of Commerce, Office of Technology Policy, Technology Administration, [cited February, 2004], Available on the World Wide Web at (http://www.technology.gov/reports/TechPolicy/StateIndicators/2003_pt1.pdf).

The original data for this indicator can be found at these sources:

U.S. Patent and Trademark Office, 2001 data, [cited January, 2002], Available on the World Wide Web at (http://www.uspto.gov/web/offices/dcom/olia/oed/roster/region/index.html).

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This benchmark has not been updated for the 2004 report.

Benchmark 2.3A
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Note from NVCA Yearbook Editor: "The investment totals analyzed in this publication have been modified from previous published data to reflect the methodology used in the PricewaterhouseCoopers/Thomson Financial Venture Economics/National Venture Capital Association Money Tree Survey. This modification process occurred in early 2002 and applies to both current and legacy figures."

Benchmark 2.3B
All SBIC Program Licensees: Financing to Small Businesses by State, Reported for Fiscal Year 1998 to 2002, U.S. Small Business Administration, [cited October, 2003], Available on the World Wide Web at (http://www.sba.gov/INV/stat/table7.doc).

Benchmark 2.3C
SBA FY 2002 7(a) and 504 Approval Volume by State (2003), U.S. Small Business Administration, information provided by Chris McKeehan at the Office of Financial Assistance at the Small Business Administration, christoper.mckeehan@sba.gov [cited November, 2003].

Benchmark 2.3D
County Business Patterns, 2000 data, U.S. Census Bureau, [cited June, 2002], Available on the World Wide Web at (http://www.census.gov/prod/www/abs/cbptotal.html).

Association of Small Business Development, 2001 data. U.S. Small Business Administration, Available on the World Wide Web at (http://www.sba.gov.gopher/Local-Information/Small-Business-Development-Centers/).

Data mismatch: 2001 SBDC data and 2000 County Business Patterns data.

Association of Small Business Development, 2001 data, Available on the World Wide Web at (http://www.sba.gov/gopher/Local-Information/Small-Business-Development-Centers/).

This benchmark has not been updated for the 2004 report.

Benchmark 2.3E
Minority and Women-Owned Businesses, 2001 data, U.S. Census Bureau, 1997 Census, [cited May, 2001], Available on the World Wide Web at (http://www.census.gov/epcd/mwb97/us/us.html).

Minority includes African-Americans, Asian-Americans, Hispanics, and Native Americans.

This benchmark has not been updated for the 2004 report.

Benchmark 2.3F
Ibid.

This benchmark has not been updated for the 2004 report.

Benchmark 2.4A
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Mismatched data years: 2002 merchandise exports and 2000 GSP data.

Benchmark 2.4B
Export Data: *2001 Exports by State of the Origin of Movement, Number of Exporting Companies, Value and Percent Change Between the 2000 and 2001 Results*, U.S. Census Bureau, [cited February, 2004], Available on the World Wide Web at (http://www.census.gov/foreign-trade/aip/edbrel-0001.pdf).

Establishments: *2001 County Business Patterns (NAICS),* U.S. Census Bureau, [cited February, 2004], Available on the World Wide Web at (http://censtats.census.gov/cgi-gin/cbpnaic/cbpcomp.pl).

Benchmark 2.4C
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Ibid.

Benchmark 2.4E
Property data: *Gross Property, Plant, and Equipment of Affiliates, State by Selected Country of UBO, 2001*, Bureau of Economic Analysis, 2001 data, [cited November, 2003], Available on the World Wide Web at (http://www.bea.doc.gov/bea/di/W2_01.xls).

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Higher Education Council of Puerto Rico, U.S. Census estimate, 2002-2003. Enrollment source is different than in *The 2002 Southern Innovation Index.*

Benchmark PR 2
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Benchmark PR 3
Ibid.

Benchmark PR 4
Ibid.

Benchmark PR 5
NA

Benchmark PR 6
Puerto Rico Planning Board.

Benchmark PR 7
NA

Benchmark PR 8
Puerto Rico Planning Board.

Benchmark PR 9
Office of Technology Policy. *State Science & Technology Indicators, Fourth Edition*. 2004. Available on the World Wide Web at (http://www.technology.gov/reports/TechPolicy/StateIndicators/2004/Sect3_State_Profiles.pdf).

Benchmark PR 10
Ibid.

Benchmark PR 11
Ibid.

Benchmark PR 12
NA

Benchmark PR 13
NA

Benchmark PR14
Office of Technology Policy. *State Science & Technology Indicators, Fourth Edition*. 2004. Available on the World Wide Web at (http://www.technology.gov/reports/TechPolicy/StateIndicators/2004/Sect3_State_Profiles.pdf) .

Benchmark PR 15
Ibid.

Benchmark PR 16
Department of Labor, Bureau of Labor Statistics, *Quarterly Census of Employment and Wages, Second Quarter*, 2003.

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