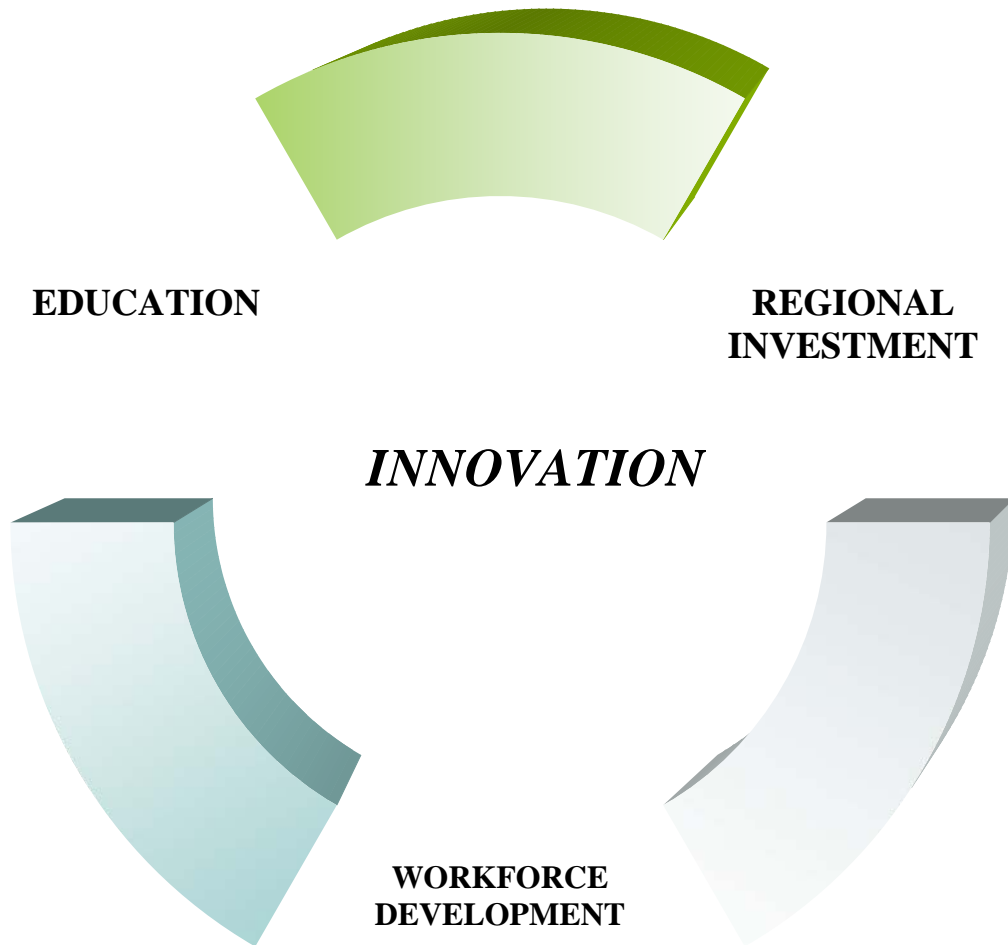


**INNOVATION AMERICA:  
A Partnership**



Presented by:

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## **Purpose**

This paper proposes a federal policy framework to assist states in developing collaborative efforts between public, private and education sectors to accelerate the rate of U.S. innovation and promote competitiveness and economic prosperity.

## **Findings**

### *The Challenge*

United States' economic growth in the 21<sup>st</sup> century will be driven by our nation's ability to generate new ideas and translate them into innovations. These innovations will be utilized to develop new services and products that create value, generate high wage jobs and propel economic growth.

Recent trade agreements and the availability of technology have created a true world marketplace. The new global economy is extremely competitive, with high-value products flowing from knowledge-based regional economies to all parts of the world.

During the 20<sup>th</sup> century, the United States competed with either high wage, high technology countries in the developed world or low wage, low technology countries in underdeveloped regions. Now the United States must compete with high technology, low wage emerging nations. Some of these emerging nations are rapidly growing large countries—such as India and China—others are smaller, including Taiwan, Korea and Singapore or the emerging economies of Eastern Europe and South America.

Some of these countries compete with the United States in the production of manufacturing goods such as textiles, electronics and automobiles, while others are challenging the United States in Web construction, call centers, software development and services. Essentially, globalization has reduced many of America's industrial advantages and opened all sectors of the economy to increased competition.

While some view global competition as pitting nation against nation, it is actually a contest between high-performing economic regions throughout the world. Exporting firms located in Phoenix are just as likely to compete with firms in Bangalore, India; Guang Zhou, China; or Dublin, Ireland as with firms around Boston, Massachusetts; Northern Virginia; or Austin, Texas. These innovation "hot spots" feature fast growing, high wage companies and strong regional assets—such as quality educational institutions and a robust research and development environment—and are the catalysts for growth regionally and nationally. It is the competitiveness of a nation's innovative regions in trading international goods and services that will determine the relative wealth of that nation over time.

Given that the United States is a high wage nation, its ability to compete through low-cost production of internationally traded goods is limited. Through innovation, the United States must transform industries, reshape markets and stay on the leading edge of technology. Government and the private sector also must collaborate more effectively to create synergies between diverse knowledge, information and technology assets.

## ***Innovation***

The term “innovation” is defined broadly as the creation and application of new ideas that generate economic and social value. In the 1990s, innovation was about technology and its application. Today innovation is much more than technology transfer and product transformation; it is about reinventing strategies, products and processes and creating new business models and new markets. It is about selecting the right ideas and executing the correct strategy quickly and efficiently. Often the greatest barrier to innovation is not a lack of ideas, but the inability to coordinate diverse components to execute a plan effectively.

Innovation is not limited to the new ideas and findings generated by research laboratories. Many innovations stem from contact with customers and suppliers or simply re-envisioning an existing product. Sometimes it involves adopting existing technology for a new purpose. These types of innovations are spurred by collaboration, particularly among various disciplines, and a strong entrepreneurial culture.

Innovation requires talented people with the skills and resources necessary to compete and thrive in the global marketplace. It also requires those people to collaborate and cooperate. Such synergies are best generated on a regional basis where ideas, people and resources are encouraged to intersect.

## ***Why States***

States are critical to creating innovative economies for a variety of reasons. First, states are the major investors in human capital: through preschool, elementary and secondary education—and state colleges, universities and technical schools—state and local governments are funding the overwhelming percentage of this investment. States also are the major providers of physical infrastructure including roads, bridges, highways, ports and local transit, and they often have jurisdiction over rights of way for broadband. Increasingly, they also directly fund research and development.

Many successful models for regional innovation exist throughout the United States. It is difficult to create an innovative region from scratch, but a state can nurture such development by reducing regulatory barriers, providing research funding to its universities, creating tax policies that support the growth of innovative industries and utilizing the governor to bring all parties to the table to develop growth strategies for the region. Because innovative, fast growing companies typically locate near state assets such as universities and transportation centers, it is the proper role of government to assist in accelerating innovative economies. It is also possible for two or more states to enhance the assets of a region that adjoins common borders or even coordinate strategies to assist the entire region. A prime example for a multi-state high growth region is the Route 128 corridor in New England, where education assets near Boston and high-tech businesses along the corridor fuel job growth in Southern Vermont, New Hampshire and Rhode Island.

Given the seriousness of the competitive challenge to the United States, it is critical for governors and states to focus on this issue and develop strategies to nurture innovation opportunities within their states. Strategies must be proactive and aggressive, and they must increase the public awareness of the problems and opportunities of this economic challenge.

## Solutions

To spur innovation, states must improve and realign their programs to encourage cross-sector collaboration, target investment and measure outcomes. Specifically, states should focus time and resources in the areas of improving education, encouraging economic development and enhancing workforce training.

First, states must boost the development of skilled human talent that powers innovation. There is growing agreement that American students are not attaining the level of basic knowledge they need in literacy, math, science, technology and engineering and are falling behind their peers in many other countries. Governors are uniquely positioned to address this challenge through a variety of means from teacher training to curriculum enhancement.

Second, states must improve the economic environment and institutions that support innovation. To maintain American intellectual leadership in the development and marketing of new processes, products and services, states need to cultivate new technologies and aid their commercialization through well-aligned investments in education, R&D and entrepreneurship. In addition, states must help entrepreneurs establish relationships with researchers, eliminate policies that inhibit the transfer of new ideas from the lab to the market and enhance opportunities for entrepreneurs to obtain the early-stage investing on which innovative products depend. A new program launched by the U.S. Department of Labor called Workforce Innovation in Regional Economic Development (WIRED) is a good example of a program that fosters regional innovation.

Third, states must help the current generation of American workers respond to the changing global marketplace. Industries and professions that in the past faced little international competition now compete against similarly skilled workers overseas. Just as innovation transcends the disciplinary stovepipes of the past, so must worker assistance programs respond to this changing dynamic. Economic development efforts must be linked to and coordinated with workforce training programs. If all workers are going to succeed, the same collaboration that generates new ideas and products must also work to develop workers at all levels with the skills necessary for the future.

To enable these solutions, the federal government should partner with states to encourage these inherently complementary strategies. The following sections outline competitive grant programs and federal statutory changes that, if enacted, would accelerate state action by reducing barriers and targeting investment. The proposals call on state and federal governments to emphasize math and science to improve the nation's pool of skilled, human talent over the long-term; promote innovative policies and institutions that support high-growth regions and businesses that yield short-run benefits by stimulating employment; and create more flexible workforce programs to address the critical skill and labor needs of industries today and provide the skills necessary for future growth and competitiveness. The proposals also emphasize the need for strategic planning and collaboration, targeted investment to generate new ideas and innovations and the development of systems to measure outcomes and provide accountability.

# Proposal

## *Section One: Math, Science and Foreign Language Proficiency*

Governors are leaders in aligning state education systems from preschool to college, reforming education, and working to improve the competitiveness of our nation's future workforce.

Enhancing P-16+ education (early childhood education through college or beyond) is critical to ensure our nation's competitiveness. The skills needed for individuals to compete and prosper in the global economy require a strong foundation in science, technology, engineering and mathematics (STEM) disciplines, but collaboration and cooperation that are the hallmarks of innovation demand additional skill sets in areas like writing, communications and languages. The recommendations below seek to create a flexible, but coordinated plan to address these critical education needs. This endeavor will require a strong federal-state partnership, with a federal role in the following seven areas:

1. **Student Tuition Assistance for STEM and Critical Foreign Language Career Paths** (to encourage students to pursue higher education and careers in mathematics, science, technology, engineering, and critical foreign languages)
2. **Support for Teachers** (to infuse the education pipeline with high quality teachers in mathematics, science, technology, engineering, and critical foreign languages, particularly in high-need and hard-to-staff schools)
3. **STEM Education Improvement Grants** (to provide resources and technical assistance to governors to implement or expand STEM education and infrastructure activities at the state, regional, or local level)
4. **High School Redesign Enhancement** (to expand and replicate governor-led high school redesign efforts around the country)
5. **P-16+ Council Grants to Governors** (to implement councils, generate solutions, and patch holes in the P-16+ pipeline)
6. **P-16+ Data System Grants to Governors** (to create aligned, comprehensive, and efficient state P-16+ education data systems)
7. **Voluntary International Benchmarking** (to provide governors with incentive funds to analyze state standards with PISA or TIMSS and to implement governor-led solutions)

Through these seven reforms, the proposal seeks to create a federal-state partnership with clear governance and resources that will help move the engines of education, business, and the workforce in the same direction towards enhancing state and regional innovation and economic growth.

### *1. Student Tuition Assistance for STEM and Critical Foreign Language Career Paths*

This program would encourage students to pursue careers in STEM areas by:

- Expanding eligibility for the federal Academic Competitiveness and National SMART Grants program to include traditionally underrepresented students in math, science, technology, engineering, and critical foreign language majors and careers. Priority should be given to Pell eligible students. Part-time students should be eligible for prorated AC/SMART grants. States and local districts must retain the authority to set a rigorous high school curriculum in this expansion.
- Providing federal tuition assistance or scholarships to students who pursue a B.A. or M.A. in a STEM subject or foreign language while concurrently completing teacher

certification (would require commitment to teach in a hard-to-staff or high-need school for at least 3 years).

## **2. *Support for Teachers***

This program would help recruit, retain, and inspire high quality K-12 teachers in STEM areas:

- Provide loan forgiveness in annual payments for current teachers who become highly qualified and agree to teach for at least 5 years in Science, Technology, Engineering, Math (STEM), or critical foreign languages. Teachers must be serving in high-need or hard-to-staff K-12 public schools, or in states or regions demonstrating a high-need for teachers in the subject of their certification.
- Provide federal funds to governors to provide training and coursework through a state alternative certification program to professionals in STEM specialties and critical foreign languages to become teachers in these areas. These professionals must teach in hard-to-staff schools (K-12) or in regions demonstrating a shortage of teachers in the subject of their certification.
- Increase funding for the federal Teacher Incentive Fund to help retain high quality, high-need teachers.

## **3. *STEM Education Improvement Grants***

This program would create a competitive grant to governors or a consortium of governors to develop or enhance K-16 STEM education at the state, consortium, and local level.

- Governors (or a consortium of governors) would be required to submit a state plan to a third-party entity with the expertise to review state plans, provide technical assistance to governors, and provide forums to share exemplar state models/best practices to develop and expand K-16 STEM education initiatives to governors.
  - The state plan would include: a description of the proposed STEM education reform activities; a timeline for this plan; accountability measures related to the plan; a plan for long-term sustainability; and the capacity of the state to implement the plan as a whole.
- Grants will be awarded with a priority on demonstrated need (i.e. business need, large-scale dearth of workers in certain sectors, low-performing schools, teacher shortages). Grants would also be awarded for innovative ideas or exemplary consortium proposals.
- At least one member of the business and economic development community must be included in developing the state plan.
- The grant would require a \$1 non-federal match for every \$2 of federal funding.
- Private or non-profit financial support would count towards the non-federal match portion.
- Any activities supported by the grant must further the goal of preparing students for success in education and the workforce through STEM initiatives.
- Any STEM education activities supported by this grant must be aligned with the goals, requirements, and definitions within existing federal education laws, including NCLB, IDEA, Carl D. Perkins, HEA and Head Start.
- Grants would be for a five year period.

#### **4. High School Redesign Enhancement**

Governors are leading high school redesign initiatives to increase academic rigor, relevance, and options in high schools. State high school redesign efforts must be leveraged and expanded to increase our competitiveness.

This program would provide federal funds to governors to support:

- Expanding access to Advanced Placement (AP), International Baccalaureate (IB), and certificate programs for all students, with a priority on STEM and foreign language programs, including paying for student AP or IB testing, training teachers to teach AP, IB, and certificate courses, and administering more AP, IB, and certificate courses and assessments.
- Developing, expanding, and improving state dual enrollment and early college programs (bridging high school and college) in a variety of coursework areas, including paying for qualified college credits.
- Collaborating with business and local schools to develop and provide mentoring, shadowing, and internship opportunities to students in grades 7-12.
- Expanding the use of technology in teaching and learning including e-learning opportunities, virtual High Schools, e-mentoring and e-portfolios.

#### **5. P-16+ Council Grants to Governors**

P-16+ Council Grants will provide governors (or a person or agency selected by the governor) the clear authority and responsibility for convening key state stakeholders to examine the alignment of the state education system from preschool through college (and graduate school, if so desired).

The goal of P-16+ Council Grants is twofold: Governors may apply for one or both of the below-mentioned grants.

- a. P-16+ Council Development Grants will enable governors to create, implement, and further develop existing or new state P-16 Councils in order to:
  - Align and coordinate the education and workforce goals of state education systems;
  - Identify “leaks” in the pipeline where alignment is lacking or where students are struggling or being lost, or where clear, pervasive achievement gaps are documented; and
  - Develop solutions to align the state education system at “leak” points and meet the educational and workforce goals of the Council.

The federal/non-federal match for these grants will be \$2:\$1. The non-federal match may include donations from public and private entities as well as in-kind resources. Grants shall be issued to governors for a three-year period, and governors must provide a study of the P-16+ state system as well as recommendations for alignment at the end of this three year period.

Minimum requirements for the membership of a new state P-16+ council are:

- the governor or a governor’s designee

- one agency-head representative from each level of education (early childhood, elementary and secondary, community colleges, and colleges and universities);
  - a business representative (from companies) or a community representative; and
  - a state workforce representative.
- b. P-16+ Council Solution Grants will provide incentive grants and technical assistance to states to implement key solutions generated by their Council.

The federal/non-federal match for these grants will be \$2:\$1. The non-Federal match may include donations from public and private entities as well as in-kind resources. Grants shall be issued to governors for two or four year periods and include a plan to evaluate success. A third party, as outlined in Section 3, would administer the grant program.

#### **6. P-16+ Data System Grants to Governors**

These grants will allow governors or a consortium of governors to plan for, create, or further develop an aligned P-16+ data system to collect and track information on a range of indicators.

- Grants to governors shall last for up to 3 years, and may be renewed for up to 2 years through a competitive application process to the third party entity in section 3 of this proposal.
- States with existing longitudinal data systems shall be allowed to modify the existing system using this grant.
- The first year of the grant shall be used for assessing existing data capacity within the state, developing MOAs among state agencies for the share and use of data and information, and designing the P-16+ data system.
- The second and third years of the grant shall be used to build and implement the data system.
- After the first year of the grant program, each grant recipient or designated representative shall complete and submit to the designated third party entity a brief multi-page survey common across all states, developed by the third-party, which may include:
  - longitudinal and short-term measures to be included,
  - how students will be identified,
  - student achievement, teacher certification or retention rates
  - additional areas requiring technical assistance, or
  - federal barriers or costly burdens that prohibit or slow implementation of P-16+ data systems
- After the third year, each grant recipient or designated representative shall complete and submit a brief multi-page survey common across all states which may include:
  - Status of implementation of the data system
  - Any modifications to the P-16+ data collection and reporting system, and
  - Any federal changes necessary to implement the state designed system
- Information from these surveys would be made publicly available.

Governors may apply for the P-16+ Council Grants, the P-16+ Data System Grant, or both of these grants.

## ***7. Voluntary International Benchmarking***

This program would:

- Provide federal funds to the National Academies of Science (NAS) to:
  - Provide analysis to states, upon Governor's request, on how state standards benchmark with skills or the preparation for skills being measured on PISA or TIMSS.
  - Publicly report on states that request the alignment of standards with PISA or TIMSS, for grades 5-12 at a minimum and grades P-16+ at a maximum.
- Provide governors with voluntary incentive funds to:
  - Participate in the Voluntary International Benchmarking analysis for grades 5-12, at a minimum, and P-16+ at a maximum.
  - Implement governor-determined solutions, in coordination with a P-16+ Council if available, to address problems identified in benchmarking analysis.
  - Grant period would be four years.

## ***Section Two: Workforce Enhancement***

The strength of America is our citizens – their innovation, creativity, and hard work. Our workforce system must be transformed for the 21<sup>st</sup> century global economy to be skilled, nimble, and flexible and support lifelong learning and restore our nation's competitive edge. NGA's workforce enhancement proposal would help states create efficient workforce systems aligned with regional education and economic development; enhance services to workers; and reduce costly administrative burdens to regions, states, and localities, while creating more transparent accountability systems.

### ***1. State and Regional Economic Alignment Program***

The Program will increase coordination, innovation, and effectiveness of state workforce programs by:

- Expanding state flexibility by authorizing governors, at their discretion, to integrate two or more of the following funding streams at the state level: WIA Dislocated Workers, Wagner-Peyser, WIA Adult, WIA Youth, and Adult Education.
- Pairing funding flexibility with new accountability by requiring state workforce systems to align with state or regional economic development goals.
- Encouraging state and local flexibility because the program is optional and states can pick and choose included programs. Therefore, the included programs will vary from state to state based on local, state, regional, and sector specific economic development and workforce needs.
- Helping ensure a federal investment into worker training by preserving individual federal line items for all included programs to insulate against creation of a federal block grant or reduction in federal funds.
- Developing common measures to increase accountability, focus on customer outcomes, and reduce administrative costs.

## ***2. Common Outcome Measures***

The program would increase workforce system alignment through common accountability measures, while focusing on meaningful customer outcomes related to education and employment readiness, reducing administrative costs, and increasing transparency to evaluate federal, state, and local investments. Specifically, this optional state program would replace burdensome federal reporting requirements with new common workforce measures in five areas, short-term employment, long-term employment, literacy and numeric gains, earnings, and certificate completion. This program would also provide funds to implement the new common measures.

## ***3. State and Regional Economic Development through Workforce Investment***

The program will award grants to states to carry out innovative and coordinated WIA programming consistent with the statewide, regional, or sector specific economic and educational interests. The funds are to be used by the state to implement or replicate innovative programming that improves coordination between WIA and:

- related federal workforce and education programs; or
- statewide economic development; or
- business needs.

State, regional, and sector specific economic development and workforce needs and strategies are to be determined and defined with input from lead state agencies and state workforce boards, along with representatives from higher education, community colleges, career and technical education institutions.

Grants will be awarded in two parts. Part one: one-year planning grants will be awarded to 25 states for developing an innovation plan to coordinate WIA resources with other federal and state workforce and education programs in support of the Governor's regional, economic, or sector-based workforce investment goals. Funds could be used to assist states in the development of goals.

Part two: States that have already developed plans may also apply for implementation grants. The grants would be awarded to 10 states to implement their innovation plan over three years. Implementation grants would require a non-federal match of 20%.

## ***Section Three: Regional Innovation***

Because competition and innovation in the 21<sup>st</sup> century will be driven by high-growth economic regions, economic development strategies need to encompass regional assets. Governors are uniquely situated to organize regional development because the scope of their authority includes all aspects of the public sector and all regions within their states. The following programs are designed to build on the ability of governors to pull together diverse sectors to create a culture of collaboration and cooperation that will accelerate innovation and economic growth.

### ***1. Competitive Innovation Grants***

Innovation grants would be competitive grants administered by the U.S. Department of Commerce to encourage states to accelerate regional innovation and economic growth. The grants would be used to establish innovation councils, which would work to develop regional partnerships between state and local government, secondary and postsecondary education, and the private sector. The mission of the council would be to accelerate the rates of innovation by developing and implementing strategic plans that target and structure investments in education, R&D, entrepreneurship, and related economic activities. These strategic plans should include recommendations to:

- enable states to designate and organize regional governance bodies;
- enable Governors to realign existing jurisdictions for economic development, workforce development, and higher education to fit a regional or statewide approach;
- assess regional and statewide assets, current innovation potential, and growth potential;
- set goals for increased performance including, but not limited to, high school graduation rate, proportion of workforce consisting of civilian scientists and engineers, business R&D as a percentage of gross region produce, number of start-ups; and,
- create new partnerships with academic institutions and the private sector and develop targeted investments.

Members of the councils would be appointed by the governor, chaired by a representative of the private sector, and designed to encompass a state, an economic region within a state, or regions across adjoining states. Pre-existing councils and attendant programs would be eligible to participate. If multiple proposals are made from a state, the Department of Commerce will consider proposals in priority order from the Governor.

As a condition of the federal grant, each state would agree to provide a 20 percent non-federal match.

The Assistant Secretary for Economic Development at the Department of Commerce would both administer the grants and make final decisions on which states receive awards. The Secretary would establish an advisory council, including representatives of the private sector, members of Congress and Governors, to develop eligibility criteria and reporting requirements, review the proposals and make recommendations to the Assistant Secretary on the selection of states.

### ***2. Competitive Research and Development Grants Program***

This program will provide state and regional innovation councils with the research and development funds to stimulate the rate of innovation and implement their strategic plans.

The regional or state councils must have already been selected to receive one of the discretionary grants. The intent is to make awards to the state or regional councils that have the best proposals in terms of both accelerating the rate of innovation and creating high wage jobs.

The proposals should specify which state and regional governments are applying, and whether any federal laboratories, institutions of higher education, non-profit research groups or private sector entities are participating. To ensure robust private sector participation, a minimum of 10 private sector firms should be identified as participants.

As a condition of the federal grant, the applying council would commit to providing a one-third non-federal match.

The Assistant Secretary for Economic Development at the Department of Commerce would both administer the grants and make final decisions on which councils receive awards. The Secretary would establish an advisory council, including representatives of the private sector, members of Congress, and Governors, to develop eligibility criteria and reporting requirements, review the proposals and make recommendations to the Assistant Secretary on the selection of states.

### ***3. Grants for Broadband Deployment***

As technologies change and needs for more and better broadband infrastructure increase each year, funds must be available to create programs to ensure states close digital divides and also continually attract new investments in telecommunications infrastructure. This program will provide states with funds needed to increase access, adoption and usage of broadband technology, as well as provide financial assistance to continue to update technology.

The U.S. Department of Commerce will be responsible for administering and distributing grants to public-private partnerships formed by states to develop and implement plans which identify and create effective strategies to meet the technology needs of communities and business. Pre-existing public-private partnerships would be eligible to participate. Public-private partnership plans should:

- Develop regional map-based technology relating to the availability and use of broadband and computers. By identifying the gaps that exist, the public private partnership can focus on effective strategies to meet the technology needs (current and future) of businesses and other users.
- Design development programs that focus on community-level technology applications including, but not limited to, math, science, health, government and job skills.
- Create programs that deliver affordable computers and broadband access in underserved areas and populations.

### ***4. Competitive Stimulus Grants***

This program will provide states with continuing incentives to extend economic development opportunities for innovation-driven industries and services.

States with cabinets or agencies devoted to economic development would compete for federal funds to leverage state funds dedicated to spur innovation. Grant funds would be administered by the Economic Development Administration within the U.S. Department of Commerce. To receive federal funding state agencies should develop programs that concentrate on, but are not limited to:

- creating clusters of innovation-driven industries within the state;
- promoting companies to work with state universities to undertake research and development work leading to innovation and technology development;

- supporting the commercialization on innovative ideas and technologies developed within the state;
- provide for investment in facilities used to pursue research; and
- encourage venture capital formation by certifying privately operated venture funds.