

State Opportunities under the American Recovery and Reinvestment Act: Research and Development

In addition to providing flexible appropriations and formula funds to states and individuals for stimulus purposes, the American Recovery and Reinvestment Act also provides resources to states to create long-run economic growth opportunities. The four key areas are: (1) health information technology, (2) energy and green jobs programs, (3) broadband infrastructure and deployment, and (4) research and development. This paper describes the opportunities available to states in the research and development area. The other three papers may be found at www.nga.org/ARRA.

Summary

Since most states have strategies to build innovation capacity to spur long-term economic growth, governors should be aware that the stimulus bill includes increased federal investment in research and development, research equipment, and research facilities. ARRA provides an immediate boost that allows federal funding to see a real increase for the first time in five years. In particular, the National Science Foundation, the Department of Energy Office of Science, and the National Institute of Standards and Technology, the three agencies highlighted in the America COMPETES Act of 2007 and President Bush's American Competitiveness Initiative (ACI), will all receive significant boosts to their budgets.

Overall, there may be as much as \$21.5 billion in new federal R&D money, including \$18 billion for research and \$3.5 billion for R&D facilities. The majority of this money will be available to universities and research institutes and awarded through a competitive process.

To take advantage of this unprecedented opportunity for states to leverage a significant infusion of federal funds, Governors can:

- Quickly identify specific areas of R&D that should be pursued because they match state objectives to strengthen the expertise of their universities and research institutes (e.g., biosciences, clean energy) or add new institutes where the opportunity exists.
- Establish a science and technology advisory committee, including presidents of universities and medical schools, heads of federal and state research institutes, directors of state R&D investment funds, and executives from science and technology companies, to coordinate efforts to pursue these new funds.
- In some cases, consider (perhaps together with the private sector) ways to provide matching research dollars to provide incentives to pursue research in strategic areas. This is especially true for the construction grants, which require matching state or university dollars.

The amount of additional R&D funding is listed below by federal agency, along with key requirements and issues for governors.

1 National Science Foundation (Title II, Departments of Commerce, Justice, Science, and Related Agencies)

1.1 Purpose

- Funding for competitive research grants, education programs, and major research equipment and facilities construction.

1.2 Funding Level

- \$3 billion broken out by the following, respectively:
 - \$2 billion for research, distributed through regular peer review process;
 - \$400 million for research equipment and facilities construction;
 - \$100 million for education and human resources programs; and,
 - \$500 million for academic research infrastructure and major research instrumentation.

1.3 2008 Appropriations

- NSF received \$6.05 billion; the academic research infrastructure program receiving no funding, the major research instrumentation program receiving \$94 million, and major research equipment and facilities construction receiving \$205 million.

2 National Institutes of Health (Title VIII, Departments of Labor, Health and Human Services, Education, and Related Agencies)

2.1 Purpose

- Funding for research that expands the scope of ongoing project and that advances public and international health priorities.

2.2 Funding Level

- \$10.4 billion in the following areas of focus:
 - \$8.2 billion to the Office of the Director to fund intramural (within NIH) and extramural (outside of NIH) research over two years;
 - \$1.3 billion for competitively awarded extramural grants for repair and modernization of existing academic research facilities;
 - \$500 million for NIH labs and facilities; and,
 - \$400 million for health care comparative effectiveness research.

2.3 2008 Appropriations

- NIH received \$29.6 billion distributed among the institutes with \$119 million available for NIH buildings and facilities area.

3 Department of Energy (Title IV, Department of Energy, Energy Programs, Energy Efficiency and Renewable Energy)

3.1 Purpose

- Funding for basic and applied research, demonstration and deployment activities, facilities upgrades and construction, and advanced scientific computing.

3.2 Funding Level

- \$5.7 billion in the following areas of focus:
 - \$1.6 billion for the DOE Office of Science for basic research;
 - \$2.5 billion for energy efficiency and renewable research;¹
 - \$1 billion for fossil energy research, as part of the Fossil Energy Research and Development program;²
 - \$200 million for Electricity delivery and reliability research; and,
 - \$400 million for the Advanced Research Projects Agency-Energy (ARPA-E).

3.3 2008 Appropriations

- DOE Office of Science received \$4.06 billion, Energy Efficiency and Renewables program received \$1.24 billion, and Electricity delivery and reliability research received \$111 million.

4 National Institute for Standards and Technology (Title II, Departments of Commerce, Justice, Science, and Related Agencies)

4.1 Purpose

- Funding for research, competitive grants, fellowships, and the maintenance and construction of facilities and laboratories.

4.2 Funding Level

- \$600 million broken out by the following focus areas, respectively:
 - \$240 million for NIST R&D; and,
 - \$360 million for construction of NIST laboratory facilities.

4.3 2008 Appropriations

- \$441 million for R&D and \$160 million for facilities.

¹ Total funding for the Energy Efficiency and Renewable Energy Program is \$16.5 billion, but as [AAAS notes](#), only \$2.5 billion of this is directed towards research and development activities.

² \$3.4 billion is available for the Fossil Energy Research and Development Program, but as [AAAS notes](#), only \$1 billion of this funding is directed towards research and development activities.

5 National Aeronautics and Space Administration (Title II, Departments of Commerce, Justice, Science, and Related Agencies)

5.1 Purpose

- Funding for research with an emphasis on climate change-related satellite missions and increasing supercomputing capabilities.

5.2 Funding Level

- \$1 billion among the following areas:
 - \$400 million for science research;
 - \$150 million for aeronautics research;
 - \$400 million for exploration; and,
 - \$50 million for cross-agency support.

5.3 2008 Appropriations

- NASA received \$4.7 billion for science research and \$512 million for aeronautics research.

6 Requirements

The funding for the grant programs listed above is subject to the same requirements, including:

- All research and construction grants are competitively funded through existing RFP to proposal to peer-reviewed decisions.
- No state match is required for research grants; state or university matching is required for most construction and equipment grants.
- The bill does not contain provisions requiring all of the funding to be awarded within 120 days of when the President signs the bill into law, but the intent remains to spend the money as quickly as possible to provide immediate economic stimulus.
- Nearly all of the money is designated as FY 2009 money, and most agencies are now allowed to obligate funds until the end of September 2010, and spend out the money even after that if necessary. But there will be intense political pressure to spend all the money in ARRA quickly.
- The money is used for university research projects in respective scientific disciplines, research equipment, and facilities that support the conduct of advanced scientific research.
- No state legislation will be needed to spend the money.

7 Issues for Governors

Given the tight deadlines, governors may want to coordinate in-state efforts by universities, research institutes and industry to pursue these new funds. To do that, governors may want to quickly establish a science and technology advisory committee, including presidents of universities and medical schools, heads of federal and state research institutes, directors of state R&D investment funds, and executives from science and technology companies. In some cases, governors may want to use the opportunity to reinforce the importance of matching university strengths to the research and development needs of industry and the state economy.