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December 11, 2008

The Honorable Nancy Pelosi
Speaker
U.S. House of Representatives
Washington, DC 20515-6501

Dear Speaker Pelosi:

As the economic crisis deepens across our country, we urge your leadership in considering immediate ways in which Congress can address adequate funding for meritorious scientific research proposals at the National Science Foundation (NSF). We appreciate the FY 2009 budget allocation (\$6.854 billion) given to NSF by the House Committee on Appropriations, a mark consistent with the *America COMPETES Act of 2007*, Public Law 110-69. We ask you to support this budget level for the NSF during conference with the Senate and throughout the development of a final FY 2009 appropriations bill.

We also request inclusion of robust NSF funding for meritorious research proposals, detailed below, in any emergency economic stimulus package. Such funding is needed immediately to prevent severe damage to America's delicate scientific research pipeline, much of which is linked to meritorious grants administered by NSF. At present, only about 18% of meritorious grants can be funded by NSF. And these are funded at decreasing levels as well. NSF funding also need to be considered in terms of the severe underfunding and consequent damage inflicted upon NSF over the past five fiscal years (so-called NSF "doubling" was authorized by Congress and signed into law by President Bush, but never appropriated under the *Investing in America's Future Act of 2002*).

In constant dollars, the NSF budget reached its maximum level in FY 2004 and has been decreasing since. Under the current CR, the NSF budget level is below the constant dollar FY 2003 level. This erosion of the NSF budget is having an immediate and negative effect on the entire U.S. innovation ecosystem.

ASTRA studies document the importance of research and education projects supported through the NSF and how they affect our innovation ecosystems, economic competitiveness and national security infrastructure. NSF funding creates much of our future science and technology workforce. These individuals underpin our nation's ability to be globally competitive by aiding scientific development as well as contributing to the education and training of the next generation of scientists, technologists, engineers, and mathematicians.

According to the **Coalition for National Science Funding (CNSF)** some examples of the many NSF success stories include: two NSF-supported graduate students discovering a better way of searching data on the internet, eventually founding Google, Inc; fundamental research supported by the NSF leading to the development of Magnetic Resonance Imaging (MRI), used to detect cancer and internal tissue damage; NSF-supported basic research in geography and computer science leading to the development of Geographic Information Systems (GIS), used by businesses, police departments, federal, state, and local governments, and others; and NSF-supported research that has led to an improved design of vascular prostheses called stents and stent-grafts used in non-surgical repair of aortic abdominal aneurysms and coronary artery disease.

ASTRA's Board of Directors 2008

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According to the **American Physical Society**, an ASTRA member organization, short-term fiscal stimulus efforts coupled with a longer-term set of recovery initiatives are necessary to combat the deepening American recession and the related collapse of consumer spending.

Investing federal money in infrastructure projects that have already passed the engineering and design stage and are ready to be executed contractually provides a mechanism for creating jobs and swiftly injecting money into the economy. Science infrastructure as well as grants at the NSF should be part of such a package. We are attaching a detailed graph of where such stimulus could be effectively applied within the next 120 days.

Continuing constraints on federal support for research have forced many meritorious scientific research grants to be denied or placed on hold. Worse, the economic situation for universities is worsening, largely due to declining tax revenues for publicly supported universities and colleges and terrible financial performance within university endowments. Just last week, Harvard University acknowledged the loss of more than \$8 billion in its endowment funds.

An effective Science & Technology Economic Stimulus would include completion of “bricks and mortar” projects at national laboratories, procurement of commodities for major federally-funded research programs, purchases of modern scientific instrumentation associated with ongoing grants at universities and investments in both the scientific workforce and “green energy” initiatives.

The following table provides a list of science infrastructure programs and projects, totaling \$1.55 billion, that will create more than 15,000 jobs¹, a significant fraction of them for blue collar workers in construction and manufacturing, many of them in regions of the country that have been hit most profoundly by escalating unemployment rates. Applying a commonly used economic multiplier of 2.7 to account for indirect and induced jobs, the job creation total would exceed 40,000. The proposed spending plan addresses the near-term need for an economic stimulus and the long-term need for rebuilding the nation’s scientific and engineering infrastructure upon which the future of American innovation depends.

We believe these and other projects show that it is important to maintain the fiscal health of the NSF and the overall federal science and technology infrastructure. Thank you for supporting the NSF.

ASTRA represents 120 science and technology companies, universities and colleges, nonprofit scientific and professional associations and societies and their underlying memberships. ASTRA also counts approximately 32,000 members ranging across a wide number of scientific and engineering disciplines.

Sincerely,

Wayne Johnson
For the ASTRA Board of Directors

¹ The jobs created represent a mix of lower-paying “blue collar” workers and higher-paying highly skilled technical workers. We use an average compensation of \$100,000 per job to reflect the mix.



Attachment:

**CREATING AMERICAN JOBS TODAY
STRENGTHENING AMERICAN INNOVATION TOMORROW
Source: The American Physical Society, an ASTRA Member Organization**

According to leading economists, a short-term fiscal stimulus coupled with a longer-term set of recovery initiatives are necessary to combat the deepening American recession and the related collapse of consumer spending. Investing federal money in infrastructure projects that have already passed the engineering and design stage and are ready to be executed contractually provides a mechanism for creating jobs and swiftly injecting money into the economy. Science infrastructure should be part of such a package.

Continuing constraints on federal support for research have forced many approved science infrastructure activities to be placed on hold. These include completion of “bricks and mortar” projects at national laboratories, procurement of commodities for major federally-funded research programs, purchases of modern scientific instrumentation associated with ongoing grants at universities and investments in both the scientific workforce and “green energy” initiatives.

The following table provides a list of science infrastructure programs and projects, totaling \$1.55 billion, that will create more than 15,000 jobs², a significant fraction of them for blue collar workers in construction and manufacturing, many of them in regions of the country that have been hit most profoundly by escalating unemployment rates. Applying a commonly used economic multiplier of 2.7 to account for indirect and induced jobs, the job creation total would exceed 40,000. The proposed spending plan addresses the near-term need for an economic stimulus and the long-term need for rebuilding the nation’s scientific and engineering infrastructure upon which the future of American innovation depends.

² The jobs created represent a mix of lower-paying “blue collar” workers and higher-paying highly skilled technical workers. We use an average compensation of \$100,000 per job to reflect the mix.



Agency	Project	Amount	Deployment Time
Department of Energy Office of Science		\$412.3 million	
	Science Laboratory Infrastructure	\$45 million	Less than 120 days
	<i>Seismic Upgrades at Lawrence Berkeley National Laboratory</i>		
	<i>Interdisciplinary Science Building at Brookhaven</i>		
	<i>Modernization of Laboratory Facilities at Oak Ridge</i>		
	<i>Physical Sciences Facility at Pacific Northwest National Lab</i>		
	Construction Projects and Major Items of Equipment	\$225.8 million	Less than 120 days
	<i>ALS User Support Building at Lawrence Berkeley National Laboratory</i>	<i>\$9.3 million</i>	
	<i>NSLS-II at BNL</i>	<i>\$82 million</i>	
	<i>Linac Coherent Light Source at SLAC</i>	<i>\$26 million</i>	
	<i>NO</i>	<i>\$15 million</i>	
	<i>NOVA at Fermilab</i>		
	<i>12 GeV CEBAF Upgrade at Jefferson Lab</i>	<i>\$8.5 million</i>	
	<i>ITER Domestic Procurements - ORNL</i>	<i>\$85 million</i>	
	Science Laboratory Infrastructure Demolition and Decommissioning	\$20 million	Less than 120 days
	<i>Small demolition projects</i>		
	Nuclear and High Energy Physics Job Stabilization	\$21.5 million	Less than 120 days
	<i>High Energy Physics - Fermi</i>	<i>\$15 million</i>	
	<i>Nuclear Physics</i>	<i>\$6.5 million</i>	



Energy Frontier Research Centers	\$100 million	6-12 months
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Department of Energy, EERE	\$650 million	
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Energy Efficiency & Renewable Energy	\$650 million	6-12 months
<i>Building Efficiency</i>	<i>\$250 million</i>	
<i>Battery Research Development</i>	<i>\$300 million</i>	
<i>Renewable Energy</i>	<i>\$100 million</i>	
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National Institute of Standards and Technology	\$167.5 million	
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Construction Grants Program	\$45 million	Less than 120 days
JILA Expansion	\$22.5 million	Less than 120 days
Green Manufacturing through Manufacturing Extension Partnership	\$100 million	Less than 120 days
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National Science Foundation	\$320 million	
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Major Research Instruments Program	\$100 million	Less than 120 days
Instruments & Existing Grants	\$100 million	Less than 120 days



Alaska Region Research Vessel (ARRV)

\$120 million

Less than 120 days



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