To: ASME ISCFRD Members  
From: Roy Chrobocinski, ASME Government Relations Representative  
Subject: December 2012 Federal R&D Update

A summary on legislative activity relative to research and development for December, 2012 is provided below.

- **Congress Passes Temporary “Fiscal Cliff” Deal**
- **Report to President Calls for Renewed National Focus on Basic Research to Sustain Innovation, Create Jobs**
- **Committee Hold Hearing on the “Future of NASA: Perspectives on Strategic Vision for America’s Space Program”**
- **Making the Case for a National Network for Manufacturing Innovation**

**CONGRESS PASSES TEMPORARY “FISCAL CLIFF” DEAL**

Late on January 1, 2013, Congress passed legislation to temporarily delay the budget sequestration impact of the “fiscal cliff”. The agreement raises taxes on individuals making above $400,000 and on couples making more than $450,000 a year. The automatic spending cuts, known as sequestration, has been delayed for two months. Half of the delay, approximately $12 billion, will be offset by discretionary cuts, split between defense and non-defense programs. The other half of the delay will be paid for by revenue increases. The agreement also extends the R&D tax credit for one year.

It is now up to the 113th Congress, being sworn in on January 3, 2013, to negotiate an agreement that will avoid sequestration cuts scheduled for March 1st. As these negotiations proceed, ASME and other leading scientific and engineering professional societies, universities, and businesses will continue to highlight the value of federal investments in research and development (R&D).

ASME has issued numerous position statements urging the Administration and Congress to support investments in federally funded R&D in the physical sciences and engineering, and science, technology, engineering, and mathematics (STEM) education programs. ASME’s Student and Early Career Development Council and Mechanical Engineering Department Heads Executive Committee each recently issued letters urging Congress to avert the fiscal cliff and preserve science and engineering programs.

In her letter to Congressional leadership, ASME Senior Vice President of the Student and Early Career Development Council Cindy Stong said, “We urge you to consider a comprehensive deficit reduction plan that provides fiscal stability while preserving the scientific and technological investments that are responsible for 70 percent of modern economic growth. Sequestration would threaten to reduce access to many of the cutting-edge, federally supported
research laboratories at universities across the country that are necessary to educate and prepare the future STEM leaders and innovators in the U.S. “

In their letter, the leadership of the ASME Mechanical Engineering Department Heads Executive Committee agreed, saying, “For many years, the best and brightest students around the world have looked at U.S. leadership in research and development and chose to come here to pursue their graduate education. Those graduate students have made tremendous contributions to the research programs at universities nationwide and many of those students have stayed in the United States and have had a significant impact in advancing technology development, research and teaching. Without sufficient and sustained research funding, the U.S. will lose its advantage in attracting these students, and in turn, lose its research and technology development superiority to competing countries.”

To review these and other ASME Position Statements, please visit: http://www.asme.org/about-asme/advocacy-government-relations/position-statements.

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REPORT TO PRESIDENT CALLS FOR RENEWED NATIONAL FOCUS ON BASIC RESEARCH TO SUSTAIN INNOVATION, CREATE JOBS

America’s longstanding role as a leader among nations is threatened by a convergence of global economic trends that is eroding U.S. scientific and technological dominance, demanding bold investments in domestic research and a new focus on the Nation’s great universities and national laboratories, according to a new report by a presidentially appointed council of experts.

The report, “Transformation and Opportunity: The Future of the U.S. Research Enterprise,” by the President’s Council of Advisors on Science and Technology (PCAST), finds that American technical ingenuity and commercial vibrancy remain the envy of the world, and the United States is still home to the vast majority of the world’s highest ranking universities. But expansion of global competition in the past two decades and a growing corporate emphasis on near-term results and reducing future risk has undermined private-sector support of basic and early-applied research—the fundamental fuel for innovation and long-term economic growth.

If current challenges to U.S. basic and early-applied research are not addressed, the report warns, then innovation itself may increasingly migrate abroad. In that case, the Nation risks losing not just jobs but entire new industries. Many of the benefits of science and engineering that Americans now take for granted, including longer and healthier lives, safer food, cleaner energy, and enhanced national security, could lose momentum as well, the report warns.

The report describes a number of overarching opportunities for the Federal Government, universities, and industry to strengthen the U.S. research enterprise—focusing on the need to enhance long-range investment in basic and early-stage applied research as well as the need to speed the transformation of those results into new products, industries, and jobs. Those opportunities include a bigger role for the federal government as a foundational investor in basic research; an improved policy environment to encourage greater industry investment in research and development (R&D); and a more proactive and vigorous role for research universities as
hubs of the innovation ecosystem, responsible both for nurturing basic research and for actively making connections to industry.

Among the specific actions that PCAST recommends:

- Total R&D expenditures should grow moderately to three percent of gross domestic product (GDP) from the current level of about 2.9 percent of GDP, and the executive and legislative branches should work together to develop policy incentives aimed at enhancing the share of that investment made by private industry (currently about two-thirds of the total).

- Congress and the Executive Branch should work together to find one or more mechanisms for increasing the stability and predictability of Federal research funding, including funding for research infrastructure and facilities. Possibilities include a cross-agency multiyear program and financial plan akin to DOD’s Future Years Defense Program or closer coupling of multiyear authorizations to actual appropriations for R&D.

- The Research and Experimentation Tax Credit should be made permanent, and an increase in the rate of the alternative simplified credit from 14 percent to 20 percent would “not be excessive,” the report concludes. The credit also needs to be made more useful to small and medium enterprises that are R&D intensive by instituting any or all of refundable tax credits, transferable tax credits, and modifications in the definition of “net operating loss” to give advantage to R&D expenditures.

- Building on efforts already initiated by the Administration, the Office of Management and Budget and other offices should eliminate regulations and policies that do not add value or enhance accountability, especially those that decrease the productivity of the Nation’s research universities.

- Undergraduate STEM education should be improved through the adoption of empirically validated best practices in order to attract and retain the most talented and motivated STEM students, as described in more detail in PCAST’s recent “Engage to Excel” report.

- The United States must attract and retain both for universities and industry, the world’s best researchers and students from abroad. Federal policies must support these goals by, for example, giving STEM graduates from accredited U.S. universities fast-tracked, long-term visas.

To read the complete report, go to: http://www.whitehouse.gov/sites/default/files/microsites/ostp/pcast_future_research_enterprise_20121130.pdf.

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COMMITTEE HOLDS HEARING ON THE "FUTURE OF NASA: PERSPECTIVES ON STRATEGIC VISION FOR AMERICA'S SPACE PROGRAM"

On December 13th, the House Committee on Science, Space and Technology held a hearing on the “Future of NASA: Perspectives on a Strategic Vision for America’s Space Program.” The committee reviewed the National Research Council report on “NASA’s Strategic Direction and
the Need for a National Consensus,” and heard testimony from witnesses concerning NASA’s strategic direction as the Nation faces difficult budgetary challenges.

In his opening statement, Committee Chair Ralph Hall (R-TX) set the tone for the hearing, saying in part “There are a number of significant issues confronting NASA and its space program: a diminishing number of missions under development in the space sciences arena; an aeronautics budget that can no longer support full-scale demonstration flights; and no clearly articulated vision for our human exploration program beyond the International Space Station.”

“We are in a very challenging budget environment that will be with us for the next several years. Fiscal realities demand that NASA become more efficient and sized correctly to accomplish its goals, but consensus will have to be re-established among the agency’s stakeholders to clarify NASA’s strategic vision, goals, and missions. . . I want to preserve our International Space Station, and as a strategic goal to go beyond it. But it’s not likely with this Congress – and this electorate – that we can expect vast sums for the Moon, Mars, or an asteroid. We can’t go to Mars until our people can go to the grocery store. In other words, it’s about the economy. The economy has to improve before NASA funding increases.”

The recently released NRC report was discussed by Maj. Gen. Ronald Sega, USAF (Ret), the Vice Chair of the Committee that wrote the report. Gen. Sega said, “Only with a national consensus on the agency’s future strategic direction, along the lines described in this report, can NASA continue to deliver the wonder, the knowledge, the national security, and economic benefits, and the technology that has typified its history.”

The Honorable Robert Walker, Executive Chairman of Wexler & Walker, and former chairman of the House Science Committee, said that “NASA’s basic role must be to do projects that push the envelope of what we know. High risk will lead to new technologies. That combination of risk and reward will underpin the next generation of space knowledge and products.”

The written statements of each of the witnesses, the Chairman’s complete opening statement, as well as the archived webcast of the hearing, are available at: http://science.house.gov/hearing/full-committee-hearing-future-nasa-perspectives-strategic-vision-americas-space-program

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MAKING THE CASE FOR A NATIONAL NETWORK FOR MANUFACTURING INNOVATION

The Information Technology and Innovation Foundation released a report entitled “Why America Needs a National Network for Manufacturing Innovation (NNMI)”. This report argues that America desperately needs an innovation-centered national manufacturing policy. The report outlines key challenges facing the U.S. manufacturing sector, advances reasons why the nation should care about manufacturing, and sets forth the rationale for an active federal role in fostering manufacturing innovation. Most importantly, the federal government should help to motivate other key players, especially the private sector, into action and foster stronger collaboration among them.
The report also lays out the key principles for future NNMI programs. These principles are:

- A focus within each of the NNMI’s constituent Institutes on significant, industry-defined innovation challenges, particularly in process innovation;

- Support for the full innovation process, including technology roadmapping, applied research, operation of demonstration facilities and testbeds that benefit small and medium-sized manufacturing enterprises (SMEs), education and training at all levels, and development of standards and credentials;

- Collaboration among academia, business, government, and other partners, led by manufacturers;

- A bottom-up competitive process, managed by the federal government, to identify innovation focus areas and select collaborative teams;

- Private-public co-investment, with manufacturers providing about 50 percent of each Institute’s resources and federal and state agencies carrying most of the balance.

The full report can be found at http://www2.itif.org/2012-national-network-manufacturing-innovation.pdf.