POLITICO

The science budget and the future

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Mother Nature's recent one-two Washington weather wallop was big, it was debilitating and its first phase posed a formidable threat to Super Bowl parties. But it was not a surprise. Days in advance, weather forecasters warned of the first storm's arrival, predicting an accumulation of up to 30 inches, which is precisely what the capital region got. Soon after, we were told to brace for a follow-on storm with high winds and a dozen or so more inches expected. And, like clockwork, that aftershock arrived and delivered its predicted payload.

Behind those spot-on forecasts was a sophisticated network of satellites eyeing our skies from above, radar and other sensors on the ground and sophisticated communication networks that coordinated with one another to give early and accurate assessments. The storms still did a lot of damage, but their impact was clearly diminished by a largely invisible and generally taken-for-granted web of technology, including wireless communications that have allowed many who were unable to reach their workplaces to continue their work.

Just as our country's capacity to predict and cope with extreme weather events depends heavily on science and technology, so does our ability to provide better health care for more Americans at lower cost; to meet energy needs without wrecking global climate; to protect our troops abroad and our citizens at home; and to create the new products, services and high-quality jobs that real economic recovery and sustained growth will require. Putting the science and technology in place to meet these challenges requires a vigorous partnership between the public and private sectors in which the federal government's funding and encouragement of research, development and science and math education are crucial. For an example of how well these kinds of synergies can work, we need look no further than today's booming market for global positioning system devices, which includes countless commercial products made by competing private companies, all using a technology initially developed for Department of Defense applications.

President Barack Obama understands the importance of the leadership role the federal government must play in nurturing the science and engineering capabilities needed to meet the challenges before us. That is why his recently released budget for fiscal year 2011 provides continued strong, strategic investments in this area, despite the overall budget austerity that our country's fiscal circumstances require. Now we need Congress to match the president's leadership, so that this budget's vision for investing in science, engineering, innovation and education becomes a reality.

Even within a tight budget, the president is proposing a 6.4 percent increase for civilian research and development above the 2010 funding level, along with a substantial increase for basic research in the Department of Defense. These increases are counterbalanced by reduced funding for development — the "D" in R&D — in the Defense Department, achieved mainly by transition of final-stage development programs to procurement, termination of poorly performing and lower-priority programs and cutting off funding for fiscal year 2010 congressional earmarks. The combined defense and nondefense R&D budget would be $147.7 billion, just 0.2 percent above the 2010 enacted level.

Within this budget, the president proposes to pump significantly increased sums into targeted research areas likely to deliver better technologies — and the jobs that will go with them — for advanced manufacturing, clean energy, health care, environmental protection and remediation, and national and homeland security. He's proposing:

• A $1 billion increase for the National Institutes of Health to accelerate progress toward the discovery of treatments for cancer and other health scourges.

• New support for the Defense Advanced Research Projects Agency in high-priority areas such as cybersecurity, biological processes and materials, and information processing.

• An outlay of $300 million for the new Advanced Research Projects Agency-Energy, which will apply the high-risk/high-reward approach pioneered by DARPA to yield revolutionary changes in energy technology to reduce dependence on foreign oil and accelerate the transition to a climate-friendly energy system.

• An increase of $800 million for the National Oceanic and Atmospheric Administration, much of it going to improve our nation's system of weather- and climate-observing satellites.

• An added $6 billion over five years for NASA, whose human-spaceflight program will be refocused on game-changing technologies with the potential to get astronauts to deep-space destinations faster, safer and cheaper than under earlier approaches.

• An appropriation of $3.7 billion for education in science, technology, engineering and mathematics, including a record $1 billion for enhancements in STEM education at the K-12 level, to ensure that America's pipeline of ingenuity flows strongly for decades to come and that our children — our future workers — can compete successfully with their counterparts around the world.

Further, the president's budget would make the research and experimentation tax credit permanent, providing a more reliable incentive for increased private-sector investments in R&D than the current unpredictable yearly reauthorization process.

Speaking at the National Academy of Sciences last April, the president chided those who argue that America cannot afford to spend boldly on science and technology in a time of economic difficulty. "Science is more essential for our prosperity, our security, our health, our environment and our quality of life than it has ever been before," he said. He was right then, and he is right now. So let's work together — administration and Congress, Republicans and Democrats, business and government — to make the investments in science and technology that current and future challenges require.

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