US scholars praise Obama's science as economic solution approach

Donna Young, 30 april 2013

While US President Barack Obama on 29 April acknowledged in front of a jam-packed auditorium of the nation's preeminent scientific scholars at the National Academy of Sciences (NAS) that he "did not do well enough in chemistry or physics to impress you much on those topics," he was very much in his element – hanging out with about 600 brainiacs and loving every minute of it.

Indeed, at a celebration marking the 150th anniversary of the NAS, an independent nonprofit group created by President Abraham Lincoln in 1863 to provide science, technology and health policy advice to the federal government, Mr Obama could hardly contain his enthusiasm – proudly pointing out that he initiated the first-ever White House Science Fair in 2011, which he hosted for the third time just last week, and earlier this month launched the BRAIN Initiative, an all-hands-on-deck project aimed at helping researchers find new ways to treat, cure and prevent brain disorders, such as Alzheimer's, Parkinson's, epilepsy and traumatic brain injury (scripintelligence.com, 23 April 2013, 8 February 2012, 2 April 2013, 4 April 2013).

"All around the country, scientists like you are developing therapies to regenerate damaged organs, creating new devices to enable brain-controlled prosthetic limbs and sending sophisticated robots into space to search for signs of past life on Mars," President Obama told the crowd of NAS members, who had gathered for their annual meeting. "That sense of wonder and that sense of discovery, it has practical application but it also nurtures what I believe is best in us."

But while the president joked that what's made the 150-year-old NAS so effective is that its "elite ranks" of scientists are all volunteers – "which is fortunate because we have no money anyway" – he quickly turned serious about the threat to the nation's ability to hold its leadership position in research, development and innovation from the across-the-board sequestration spending cuts, which has taken a significant bite out of the number of grants awarded by the US scientific agencies, like the National Institutes of Health (NIH) and the National Science Foundation (NSF) (scripintelligence.com, 9 April 2013).

"Instead of racing ahead on the next cutting-edge discovery, our scientists are left wondering if they'll get to start any new projects, any new research projects at all over the next few years, which means that we could lose a year, two years of scientific research as a practical matter because of misguided priorities here in this town," Mr Obama asserted. "With the pace of technological innovation today, we can't afford to stand still for a year or two years or three years. We've got to seize every opportunity we have to stay ahead. And we can't let other countries win the race for ideas and technology of the future."

"We should be reaching for a level of private and public research and development investment that we haven't seen since the height of the Space Race. That's my goal," the president said, insisting that "nobody does it better" than the US when it comes to R&D and innovation.

"The investments we make today are bound to pay off many times over in the years to come," Mr Obama said, adding that "We can't afford to gut these investments in science and technology."

The president also emphasized that his commitment to science and technology goes well beyond resources – vowing to ensure his administration upholds the integrity of the scientific process.

Mr Obama's pledge comes as the head of the House Committee on Science, Space and Technology has been circulating a draft bill that seeks to give lawmakers influence over the NSF grant-making process, which some have said would politicize the process.

"In all the sciences, we've got to make sure that we are supporting the idea that they're not subject to politics, that they're not skewed by an agenda, that, as I said before, we make sure that we go where the evidence leads us," the president said.

"For us to maintain our edge, we've got to protect our rigorous peer-review system and ensure that we only fund proposals that promise the biggest bang for taxpayer dollars," President Obama said.

"I will keep working to make sure that our scientific research does not fall victim to political maneuvers or agendas that in some ways would impact on the integrity of the scientific process. That's what's going to maintain our standards of scientific excellence for years to come."

Future of US science/innovation

"The president hit the ball out of the park," said NAS member Mary Woolley, president of the nonprofit research advocacy group Research!America, whose membership includes the Pharmaceutical Research and Manufacturers of America and the Biotechnology Industry Organization.

She praised the president for embracing science and technology as solutions to improving the nation's economic troubles.

"He understands it and makes the connection," Ms Woolley told *Scrip*. "This president has made it a choice to make science part of his legacy."

Dr John Selker, a professor of biological and ecological engineering at Oregon State University at Corvallis, whose NSF grant was recently cut by 6.3% because of the sequester, also commended President Obama for his commitment to science.

"Knowing he is behind us is a big boost," Dr Selker told *Scrip*.

World renowned immunologist and NAS member Dr Rebecca Buckley, a professor of pediatrics and immunology at Duke University in Durham, North Carolina, said what worries her the most about the cutbacks in the number of NIH and NSF grants is the potential for it to disincentivize

budding research scientists, who instead will choose to go into private practice or work for industry, "which is not going to help advance science."

"There are fewer and fewer scientists going into academic medicine," mostly because of the heavy debt students are left owing after finishing medical and graduate school, Dr Buckley told *Scrip*.

She said because of their student loan debt, young American scientists are at a disadvantage versus those international students trained at US universities, whose education often is sponsored by their home country's government – leaving the latter students debt-free.

"We offer fantastic opportunities to international students of high quality," said NAS member Dr Thomas Caskey, a professor of molecular and human genetics at Baylor College of Medicine in Houston, Texas, and former Merck executive.

While a majority of those foreign students end up staying in the US, Dr Caskey noted that China has been making an aggressive effort to convince those young scientists to return home.

He insisted the US is "not doing enough to identify the bright young people coming in from Mexico, South America and Central America. That's a huge immigration opportunity."

But Dr Buckley said the US needs to first concentrate on supporting young American scientists, especially in areas like immunology.

Ensuring young US investigators are distributed a certain amount of grants, said Dr Caskey, likely would require a policy change.

One area of R&D that is faltering in the US because of a lack of basic science, said Dr Caskey, is vaccines.

But, he said, "I don't think there is a problem with money coming into it. What's needed are smart ideas," which he said goes back to basic research.

"You've got to have the good basic science," Dr Caskey said.

But Ms Woolley argued that US basic research will continue to be lacking in vaccines and other areas until Congress embraces the idea of fully supporting it, without making it a political issue