

Scientists can't be silent

In an era of rapid technological change and an increasingly global economy, investments in research and development are crucial for spurring economic growth and sustaining competitiveness. Yet, across the U.S. federal government, scientists are playing a decreasing role in the policy-making that supports this investment, often being pushed out by a political agenda that is stridently anti-science. Meanwhile, Americans are becoming more distrustful of democratic institutions, the scientific method, and basic facts—three core beliefs on which the research enterprise depends. The United States remains the unquestioned global leader in science and innovation, but given a White House that disregards the value of science and an American public that questions the very concept of scientific consensus, sustaining the U.S. commitment to science won't happen without a fight.

Many Americans take for granted the ways in which the United States supports its scientists, but that hasn't always been the case. Before 1940, the United States had only 13 Nobel laureates in science. Since World War II, however, the country has won over 180 scientific Nobel Prizes, far more than any other nation. That's not a direct proxy for achievement, but it reflects a fundamental change in the way Americans understand the value of research. This transformation didn't happen by accident. Immigration laws have allowed aspiring scientists from around the world to study and innovate in the United States. Long-term, sustained investments in research and development have been supported by a network of universities, national laboratories, and federal research institutions such as the National Institutes of Health. Strong intellectual property laws have evolved to protect groundbreaking ideas. These efforts haven't just won Nobel Prizes. Federal investments in diverse scientific and human capital have unleashed economic growth, created tens of millions of jobs, and returned taxpayer money invested many times over.

Sadly, media headlines (and recent election results) reflect a growing distrust of science and scientists. Look no further than efforts to undermine the nearly unanimous scientific consensus on the impacts of climate change, the use of genetically modified organisms, or the importance of vaccinations. These trends predate the current administration, but President Trump has already taken steps that threaten scientific progress. In its 2018 budget

proposal, the White House is seeking to cut overall federal research funding by nearly 17%. Dozens of key scientific positions throughout federal agencies remain unfilled. The administration has sought to shutter innovative programs such as the Department of Energy's Advanced Research Projects Agency-Energy.

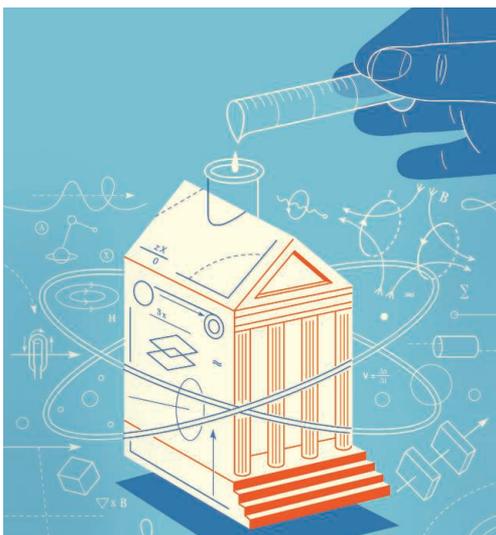
How should the scientific enterprise respond? In August 1939, Albert Einstein wrote to President Franklin D. Roosevelt, urging him to monitor the development of atomic weapons and consider new investments and partnerships with universities and industry. Einstein's letter galvanized federal involvement in creating a world-class scientific ecosystem. Scientists today should follow Einstein's lead. They should make the case for science with the public

through online communities and in local meetings and media. Scientists should fight for scientific literacy by advocating for science, technology, engineering, and mathematics (STEM) education, as well as for women and minorities in STEM fields.

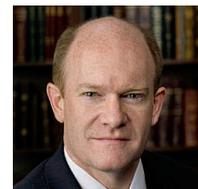
Scientists must also reach out to elected officials to explain why science matters. For example, earlier this year, I cofounded the bipartisan Senate Chemistry Caucus, which aims to promote the use of sound science in policy-making by serving as a resource for members of Congress and their staffs. All elected officials need to better understand the intersection of science and public policy.

So, don't just publish your research—publicize it. Scientists simply can't be silent, or else science truly will be silenced.

—Christopher Coons



“Scientists must...reach out to elected officials to explain why science matters.”



*Christopher Coons is a United States senator from Delaware.
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Science

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