



External Affairs & Communications

Glenn S. Ruskin
Director

December 19, 2017

The Honorable Mick Mulvaney
Director, Office of Management and Budget
725 17th Street, NW
Washington, DC 20503

Via electronic mail: ombdirector@omb.eop.gov

Dear Mr. Mulvaney:

As you complete the FY 2019 budget request, the American Chemical Society (ACS) would like to express strong support for the federal programs that sustain our innovation ecosystem and harness science and technology (S&T) to improve the lives of American citizens.

Our innovation ecosystem powers the economy and underpins our global competitiveness. The federal government is a vital partner in this ecosystem, investing in research and development (R&D) with a broad horizon. Such research unlocks new insights into our world and underlies breakthrough inventions. Targeted investments in high-potential, high-impact technologies prime the ground for the private sector and help meet national health, energy, and security needs. Federal R&D thus enables scientific discoveries that create new areas of technology for the private sector to capture and translate into new industries, products, and jobs.

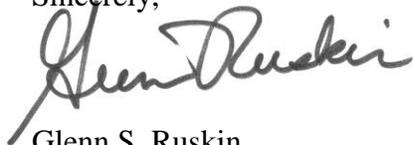
Federal S&T investments beyond R&D also contribute to the strength of the U.S. scientific enterprise. Science, technology, engineering & mathematics (STEM) education programs increase the scientific literacy of our citizens and prepare the next generation for the workplaces of the future. Technical standards—developed jointly between the government and the private sector—facilitate the trade of new technologies and preserve our ability to influence global commerce. Finally, federal safety guidelines protect workers, consumers, and the environment. Together, these S&T programs enable the United States to leverage our scientific advantages to produce and integrate innovations into daily life.

Given the vital importance of federal S&T investments, ACS is concerned by the long-term decline in their support. This includes a 40-year low in appropriations for R&D and diminished funding for programs that advance technologies and generate the technical insights required for smart decision-making. To maintain our global leadership position,

the federal government needs to reverse this downward trend and fully support R&D and other S&T programs.

Thank you for considering the importance of S&T as you complete the FY 2019 budget request. If you have any questions or would like to discuss these matters further, please do not hesitate to contact me at G_Ruskin@acs.org or 202-872-4475.

Sincerely,

A handwritten signature in black ink that reads "Glenn Ruskin". The signature is written in a cursive style with a large initial "G".

Glenn S. Ruskin
Director, External Affairs & Communications

CC: Michael Kratsios
Deputy Assistant to the President
White House Office of Science and Technology Policy

ACS asks that you prioritize investment in S&T across the federal government, particularly in the following agencies and programs:

National Science Foundation (NSF)

Founded in 1950, NSF is the only federal agency with the mission to support all fields of fundamental science and engineering, except for medical sciences. NSF-funded research pushes the boundaries of science: since its founding, the agency has supported 231 Nobel Prize winners, including 59 winners of the Nobel Prize in Chemistry. NSF-funded research also bolsters the economy, with whole industries resulting from discoveries made by NSF researchers. In addition to supporting world class research, NSF also plays a critical role in building scientific capacity across the Nation and educating the next generation of scientists and engineers.

ACS supports:

- Strong, sustained funding for NSF's Research & Related Activities account, which supports research Directorates such as the Math and Physical Sciences (MPS) Directorate that funds the bulk of NSF's chemistry research.
- A long-term vision at NSF for sustainable chemistry research.
- The Established Program to Stimulate Competitive Research (EPSCoR), which builds research workforces and infrastructure across the country.
- Programs that help researchers commercialize their discoveries, including the NSF Innovation Corps (I-Corps).
- Allocations to the NSF Education and Human Resources (EHR) Directorate that are proportional to those provided for NSF research directorates.

Department of Energy Office of Science (DOE SC)

SC is the lead federal agency supporting fundamental scientific research for energy and the largest supporter of fundamental physical science research in the United States. SC directly supports scientific research at DOE laboratories, universities, and higher-learning institutions in all 50 states, the District of Columbia, Puerto Rico, and the U.S. Virgin Islands. In addition, SC is responsible for overseeing 10 of the 17 National Laboratories and an array of world class user facilities that serve more than 32,000 users each year from across the public and private sectors.

ACS supports:

- Strong, sustained funding for the Basic Energy Sciences (BES) and Biological and Environmental Research (BER) programs, which fund research into the control of matter at the fundamental level and the interplay between different organisms, the environment, and our current and future energy needs.
- Sufficient funding to operate SC user facilities—synchrotrons, neutron sources, and nanoscience centers—at optimal levels.
- Innovative funding models, such as SC's Energy Frontier Research Centers and Energy Innovation Hubs, which pursue transformative discoveries to solve pressing national energy challenges.

Advanced Research Projects Agency-Energy (ARPA-E)

ARPA-E advances high-potential, high-impact energy technologies that build upon foundational research in the physical sciences. ARPA-E projects aim to radically improve U.S. economic prosperity, national security, and environmental well-being. Each project selected by the agency must meet rigorous technical milestones in order to receive funding. To date, ARPA-E projects have resulted in the founding of 56 companies and more than \$1.8 billion in private-sector investment to bring new technologies to market.

ACS supports:

- Continued funding for ARPA-E to maintain the agency's success in driving energy technologies to the market.

National Institutes of Health (NIH)

NIH's mission is to seek fundamental knowledge about the nature and behavior of living systems and the application of that knowledge to enhance health, lengthen life, and reduce illness and disability. Each of the 27 NIH Institutes and Centers support research to achieve this mission, with several making critical investments in physical science research related to human health.

ACS supports:

- Strong, sustained funding for all 27 Institutes and Centers, especially:
 - The National Institute of General Medical Sciences (NIGMS), which supports basic research that increases understanding of biological processes and lays the foundation for advances in disease diagnosis, treatment and prevention.
 - The National Center for Advancing Translational Sciences (NCATS), which supports efforts to rapidly bring insights from basic science into the clinic to improve patient health.
 - The National Institute of Biomedical Imaging and Bioengineering (NIBIB), which funds physical scientists and other researchers who develop technologies to detect, treat, and prevent disease.
 - The National Cancer Institute (NCI), the Nation's lead cancer research agency.
- Sufficient support for indirect costs, the essential costs of conducting research that universities and other research institutions use for critical infrastructure, regulatory compliance, and administrative support.

Environmental Protection Agency (EPA)

EPA's mission is to protect human health and the environment. In order to achieve this mission, EPA funds multidisciplinary scientific research—much of it required by law—in the areas of risk assessment and impact assessment. This actionable scientific data supports credible decision-making to safeguard human health and ecosystems from environmental pollutants. EPA plays the lead role in assessing and regulating chemicals used in commerce, and the agency is therefore a critical part of the American chemistry community.

ACS supports:

- Strong, sustained funding for EPA S&T, especially the Office of Research and Development's Chemical Safety for Sustainability and Science to Achieve Results (STAR) programs.
- Sufficient technical staff and financial support for the Chemical Risk Review and Reduction program to enable proper assessment of chemical risk and compliance with the recently amended Toxic Substances Control Act (TSCA).

U.S. Chemical Safety & Hazard Investigation Board (CSB)

CSB is a non-regulatory agency created by Congress in 1990 to investigate accidents to determine the conditions and circumstances which led up to the events and to identify the cause or causes so that similar events might be prevented. CSB plays a key role in the chemical enterprise by safeguarding the lives of workers and community members and protecting against unnecessary economic losses. CSB is cost effective and performs a job no other stakeholder can adequately replace.

ACS supports:

- Continued funding for CSB and its mission to promote the safe practice of chemistry for workers, communities, and the economy.

National Institute of Standards and Technology (NIST)

NIST develops and maintains the national measurement and standards system that makes cross-sector research, development, and commerce easier and more efficient. As part of this mission, NIST has developed world class scientific facilities and pioneered innovative relationships with businesses of all sizes in all parts of the country.

ACS supports:

- Strong, sustained funding for:
 - NIST's Scientific and Technical Research and Services (STRS) account, which funds the agency's laboratory and standards coordination programs.
 - NIST's Industrial Technology Services (ITS) account, which funds the Hollings Manufacturing Extension Partnership and Manufacturing USA programs. These programs provide critical technological support and work to accelerate U.S. innovation and to increase U.S. competitiveness.

Department of Education (DoEd)

DoEd sponsors programs designed to increase science literacy and train the next generation of science and engineering professionals for future employment.

ACS supports:

- Strong and sustained funding for:
 - Student Support and Academic Enrichment (SSAE) grants, which augment state programs in a number of areas including science.

- Federal TRIO programs, which offer opportunities for students from disadvantaged backgrounds to learn about the sciences.
- Perkins Career and Technical Education (CTE) programs, which provide federal support to states for postsecondary career and technical education.
- ESSA Title II Teacher Quality State Grants, which help improve the capabilities of teachers in STEM disciplines.

Department of Defense (DOD)

Defense basic and applied research programs provide the foundation for innovations that ensure the U.S. military's technological superiority. These programs are also vital sources of support for programs that train scientists and engineers in strategically valuable disciplines and ensure that U.S. manufacturers are capable of producing the sophisticated military technologies of the future.

ACS supports:

- Strong and sustained funding for:
 - DOD 6.1, 6.2, and 6.3 accounts, which fund breakthrough innovations that supply future capabilities for American warfighters.
 - DOD's contributions to the Hollings Manufacturing Extension Partnership and the Manufacturing USA program.
 - The Multidisciplinary University Research Initiatives (MURI) Program.
 - The Defense Advanced Research Projects Agency (DARPA), which funds projects with the potential to create transformative change in sciences related to DOD's mission.