

## ADDRESSING CHALLENGES AND OPPORTUNITIES THROUGH SCIENTIFIC INNOVATION

CHEMICAL SCIENTISTS AND ENGINEERS ARE COMMITTED TO ADDRESSING NATIONAL AND GLOBAL CHALLENGES SUCH AS ECONOMIC OPPORTUNITY, ENERGY AND WATER AVAILABILITY, AND ENVIRONMENTAL SUSTAINABILITY THROUGH THE APPROPRIATE APPLICATION OF CHEMICAL SCIENCE AND ENGINEERING. THROUGH THE AMERICAN CHEMICAL SOCIETY (ACS), THE WORLD'S LARGEST SCIENTIFIC SOCIETY, CHEMICAL PRACTITIONERS FROM INDUSTRY, ACADEMIA, AND GOVERNMENT WORK TO HELP PEOPLE. ACS ALSO SEEKS OPPORTUNITIES TO WORK WITH GOVERNMENTS AT THE FEDERAL AND STATE LEVELS TO SERVE THE NATION.

### FOSTER INNOVATION THROUGH RESEARCH AND TECHNOLOGY

Investments in science and engineering have produced more than half of U.S. economic growth since WWII. Strong support for chemistry and other R&D is central to our nation's global competitiveness, productivity, defense, public health, energy security, and environmental progress. Although the engines of innovation are largely in private hands, the federal government provides a significant majority of all support for basic research. This investment fosters new knowledge, industrial innovation, and the training of future scientists and engineers. Government also plays a key role in fostering a healthy climate for innovation through tax policy, international standards, intellectual property, and other incentives. ACS supports efforts to

- Promote sustained federal investments in R&D, science infrastructure, and industrial innovation to enhance U.S. global competitiveness.
- Accelerate the development and commercialization of new technologies that promote national goals in energy independence, environmental sustainability, national and homeland security, human health, and associated science and technology jobs.
- Foster U.S. tax, trade, economic, and regulatory policies that improve the competitiveness of U.S. entrepreneurs and companies.
- Strengthen the ability of worldwide legal systems to cooperatively encourage innovation through intellectual property protection.

### ADVANCE SUSTAINABILITY AND THE ENVIRONMENT

Science can lead to better understanding of new solutions to many of society's problems including environmental and health issues. In order to achieve this, the best science should be available to, and used by, government officials when making decisions. To achieve confidence in government decisions that depend upon science and technology, science must be considered in an open and responsible manner. ACS supports efforts to

- Encourage environmental decisions that promote sustainable resource usage and waste prevention in an economically viable chemical enterprise.
- Foster the development and adoption of green products and processes by industry, academia, and government.
- Ensure appropriate, balanced use of voluntary and regulatory measures in achieving environmental, health, safety, and security goals and promote the responsible use of science in environmental management.
- Encourage appropriate global harmonization of environmental, health, and safety initiatives to promote science and technology around the globe.

### STRENGTHEN SCIENCE EDUCATION AND THE SCIENTIFIC WORKFORCE

America needs scientific and engineering professionals. To equip today's students with the skills to fill the technical jobs of tomorrow, we must improve science and mathematics education at the K-12, community college, undergraduate, and graduate levels. We also need to encourage talented people to enter science and engineering fields. Workforce policies must respond to the challenges and opportunities posed by an aging demographic, a more diverse workforce, and major shifts in employment practices. ACS supports efforts to

- Enable lifelong, strong, inquiry-based science education for everyone in both formal and informal settings to improve the scientific understanding of all our citizens.
- Strengthen the quality of teaching through increased partnership and support of pre- and in-service training of educators from the kindergarten through the graduate school levels.
- Encourage women, underrepresented minorities, and people with disabilities to pursue scientific careers.
- Enhance the ability of all scientists and engineers to bring specific technical and non-technical talents to the U.S. workforce.
- Strengthen professional opportunities and employment-related incentives for science and engineering practitioners.

### SCIENCE IN THE PUBLIC POLICY ARENA

Science and technology provide critical tools that help us address our national and global needs. Open exchange of information and ideas is critical to scientific progress. However, dynamic security challenges to our infrastructure, economy, and lives require that the scientific community minimize unintended or nefarious uses of legitimate science and technology. ACS supports efforts to

- Promote a strong, non-governmental, scientific publishing enterprise that ensures access to information and exchange of scientific ideas and information among all parties with legitimate uses while appropriately protecting copyright and security-related information.
- Ensure the quality of science and technological advancement through open, rigorous, and inclusive peer review.
- Promote institutions and guidelines to ensure that governments make appropriate and open use of scientific and technological information in making policy decisions.
- Ensure the most open interactions possible among scientists, engineers, and students from across the globe.