

U.S. INNOVATION AND ENTREPRENEURSHIP

Innovation and entrepreneurship are the key components of American economic success, underpinning our ability to create the new products and jobs that keeps us competitive on the world stage.

Innovation and entrepreneurship thrive in an ecosystem that supports advances in science, technology, engineering, mathematics (STEM) and promotes interdisciplinary collaboration to adapt new ideas into creative solutions to everyday challenges. To maintain global leadership, we need to increase investment in research and development (R&D) and tap into the innovative abilities of our diverse and inclusive workforce. Recently, however, the United States has failed to fully support all aspects of the innovation and entrepreneurship ecosystem. For example, U.S. expenditures on R&D as a percentage of gross domestic product are now 8th among Organization for Economic Cooperation and Development (OECD) nations. In the near future, the U.S. leadership will be further challenged as China and other emerging economies increase their R&D focus and investments. Swift and decisive action must be taken to reverse this trend and meet the requirements of a healthy economy.

Innovation and entrepreneurship don't happen overnight; they are fostered by a sustained commitment to every step of the R&D and commercialization lifecycle. The United States' previously unmatched ability and capacity to create new products, processes, markets, and industries that change the world is built on:

- an environment that embraces high-risk, high-impact research and cultivates the development of novel applications from those research ideas;
- a robust and enabling technology transfer and commercialization capability for moving new innovations to the marketplace;
- a well-trained, determined, and diverse workforce focused on problem solving that can nurture and develop those ideas; and
- a scientific culture that encourages cross-sector and international collaboration, provides early independence to investigators, and allows mobility among academia, government, and industry.

The American Chemical Society asks policymakers to advance policies that allow our nation to remain a global leader in innovation and entrepreneurship through the following strategies:

Developing a Talented, Diverse, and Inclusive Workforce

- Enabling scientists and engineers to bring their technical talents to the broader U.S. workforce—which encompasses STEM professions as well as the arts and humanities—in the academic, governmental and industrial, sectors
- Expanding and improving effective STEM education programs at all levels (K-12, undergraduate, graduate, and continuing education) and ensuring that these programs reflect the current data regarding teaching and learning research, which increasingly emphasize that the successful practice of science requires alignment with the practices essential to promoting innovation.

The American Chemical Society (ACS) Board of Directors Committee on Public Affairs and Public Relations adopted this statement on behalf of the Society at the recommendation of the Committee on Chemistry and Public Affairs. ACS is a non-profit scientific and educational organization, chartered by Congress, with more than 157,000 chemical scientists and engineers as members. The world's largest scientific society, ACS advances the chemical enterprise, increases public awareness of chemistry, and brings its expertise to state and national matters.

American Chemical Society, 1155 Sixteenth Street NW, Washington DC 20036, 202-872-4386, www.acs.org/policy

- Creating opportunities for problem solving-based education for everyone, in both formal and informal settings, and supporting collaboration between both scientific and non-scientific disciplines.
- Encouraging scientists to pursue opportunities to cross-train in fields such as business, law, and the humanities in order to develop skills essential for broader collaboration, innovation, and entrepreneurship.
- Reviewing and updating education, training, workforce, and immigration policies to ensure that the United States has a diverse, mobile, highly-educated, and innovative workforce capable of growing the economy and supporting American enterprises and jobs.
- Enhancing training opportunities, retirement security, and professional mobility for U.S. STEM professionals.

Investing in Innovation and Entrepreneurship

- Strengthening and sustaining predictable federal investments for all phases of R&D, including R&D infrastructure, to develop the foundations for innovation and to address immediate and future economic and national interests.
- Developing successful late-stage technology transfer, development, and entrepreneurship programs, such as NSF I-CORPS, that enable scientists to pursue commercialization opportunities that result from federal investments in R&D.
- Making it easier and faster to apply for and receive government-sponsored grants that encourage translational research such as SBIRs and STTRs.
- Encouraging or establishing gap funding mechanisms to serve as a source of seed money to encourage researchers to explore opportunities to license or commercialize their research.
- Implementing U.S. corporate tax and trade policies that will make U.S. firms more competitive with our international rivals.
- Providing incentives to encourage capital investments and entrepreneurial activities from domestic and international citizens, including providing grants, low-interest loans, and accelerated depreciation tax incentives to mitigate the high start-up or retooling costs associated with high-technology businesses.

Creating and Sustaining an Ecosystem for Innovation and Entrepreneurship

- Removing barriers for cross-sector innovation among academia, government, and industry by working with federal agencies to make grants, private and public investment dollars more flexible in their implementation.
- Developing and enhancing policies and programs that enable translation of emerging technologies to be scaled up and moved across the “valley of death.”
- Improving the U.S. and international systems for patent protection and voluntary consensus standards.
- Developing efficient and effective policies and tools for administration, personnel, intellectual property, and information sharing at institutions in all sectors to facilitate the movement of R&D breakthroughs to market.
- Promoting institutions and guidelines that ensure the government makes appropriate and transparent use of scientific information in making policy decisions.

Science and technology make the United States strong by supporting millions of high-skilled, high-wage jobs and enhancing the American quality of life. The strategies listed above will help ensure that these benefits continue into the future and that our nation will remain the world’s recognized economic and innovation leader.