ISSUE BRIEF

Science Policy Principles

The American Innovation and Competitiveness Act (AICA) provides critical federal support for STEM education and innovation, allowing the U.S. to continue producing the highly skilled professionals needed to fuel innovation and conduct top-level basic science research. Additionally, the 21st Century Cures Act promotes and funds the acceleration of research into preventing and curing serious illnesses; accelerates drug and medical device development; attempts to address the opioid abuse crisis; and tries to improve mental health service delivery. Although certain important goals were achieved in these laws, CGS recommends consideration of the following principles for future science-related policies:

Promote and support programs that provide master's and doctoral students with the innovative skills they need to successfully fulfill a wide variety of career paths in a competitive global economy.

- Use data on near- mid- and longer-term career outcomes of graduate degree holders to improve and reform master's and doctoral programs.
- Encourage a broad range of professional development activities in master's and doctoral level STEM education programs, including internships for graduate research assistants, project management experiences and using effective oral and written communication skills.
- Support research traineeship programs that build upon the successes of the NSF Research Traineeship program (NRT) and NIH programs such as postdoctoral training, individual fellowships, and research training career development.
- Maintain a robust NSF Graduate Research Fellowship Program (GRFP) to foster a more diverse STEM workforce.
- Provide incentives for students to pursue doctoral studies in areas of national need.
- Award grants for entrepreneurship and commercialization to NSF-funded graduate researchers and postdoctoral fellows.
- Encourage innovations in master's programs that align with economic and workforce demands.
- Support international research experiences for U.S. STEM graduate students.
- Give priority to proposals involving collaborations between private sector and non-profit employers with universities to support graduate students and their career goals.

Reinforce the mission and purpose of NSF to improve science, engineering and math education by enhancing public scientific literacy that supports our scientific talent base at all levels.

Strengthen the pipeline of next-generation scientists and engineers, including future faculty, for continued U.S. scientific, technological and economic global leadership.