

# Science is Essential to National and Global Security



## WHY SCIENCE SUPPORT IS NEEDED NOW

For decades, our nation's investment in its science and technology enterprise has been central to ensuring national security, as well as contributing to military readiness, economic prosperity and development. Scientific knowledge has also informed and aided nations around the world facing natural and man-made disasters, from climate change and other issues that lead to global instability and unrest. Yet, the challenges of international leadership and national security are growing more complex, resulting in greater demands than ever on our investment resources. We rely on scientific investment and innovation to face these challenges and provide a safer future for all.

### A diverse, equitable and inclusive scientific workforce protects nations.



The response to global issues, such as COVID-19, brings together scientists from all walks of life, representing various nationalities, religions, races, ethnicities, genders, sexual orientations, and socioeconomic backgrounds. Solutions to complex, worldwide problems like pandemics require a diversity of perspectives and approaches. Without support for increasing diversity in STEM, these solutions will be undercut.



The U.S. is currently facing a skilled worker shortage in the science and technology sectors, and without a new infusion of STEM-trained individuals, this shortage will worsen. The [Bureau of Labor Statistics](#) estimates that the U.S. economy will need a further one million more STEM professionals by 2030.

### Science helps enhance the safety and security of vulnerable communities.



The [Internal Displacement Monitoring Centre](#) estimates that, on average, more than 232,000 people in the U.S. alone are at risk of being displaced by natural disasters every year—the country experienced around 916,000 disaster-related displacements in 2019. Support for science will help us understand the effects of a changing climate crucial for identifying vulnerable populations, migration patterns and preparing for future challenges.



Ocean acidification limits the ability of certain marine animals- many of which are fished for commercial species- to grow, survive and reproduce. The decrease in abundance or health of these animals can [negatively affect](#) the entire marine food chain, resulting in significant challenges to global economies. Approximately [3 billion people](#) worldwide depend on seafood as their primary source of protein and loss in abundance of marine life could mean increased competition and conflict over marine resources. Support for ocean research can help mitigate these global threats.

## The value of science for national and global security requires robust investment.



Eighty percent of the [National Science Foundation's](#) total budget supports more than 300,000 researchers, teachers, postdoctoral fellows, trainees and students and nearly 2,000 institutions each year. Federal investment in basic research and education helps to not only foster innovation but also the careers of students and scientists who may go on to critical national security positions in areas such as nuclear power.



Space weather research is critical to ensuring the nation's satellites and space- and ground-based national security assets and the power grid are protected and operational. According to the [National Research Council](#), a severe space weather event could leave the U.S. without critical infrastructure for 4 to 10 years.

## OUR COMMITMENT

**The American Geophysical Union (AGU) and its network of Earth and space scientists are committed to:**

- Studying the natural world and its impacts on society
- Investigating ways to reduce any negative geophysical, ecological, societal and economic effects
- Helping create resilient communities and nations, especially the most vulnerable
- Educating the public