

Policymakers must include long-term solutions to strengthen the STEM pipeline and expand science-related opportunities for Americans and international students and scholars. [According to the National Academies](#), insufficient federal funding for U.S. universities and biological sciences training programs has the potential to diminish America's ability to produce and retain a skilled technical workforce. Without a skilled research workforce, the U.S. cannot sufficiently conduct the discovery research needed to understand viruses, their origins, treatments and transmission.

There are [numerous issues](#) preventing the U.S. from strengthening its STEM workforce, such as the unequal distribution of federal research investments that amplifies systemic inequities, hostile workforces and pathways throughout the scientific ecosystem, and outdated visa and immigration policies that dissuade, rather than attract, international talent. Furthermore, the STEM workforce pipeline is not uniform in adequately preparing Ph.Ds. for the [diverse careers paths](#) that employ the majority of recent doctoral graduates, such as public and private biotechnology companies that contribute significantly to the innovation of vaccines and treatments for disease, as demonstrated during the COVID-19 pandemic.

The ASBMB urges Congress to sustainably invest in scientific research by boosting federal grants that aim to fix systemic inequities; create and expand programs aimed at early-career researchers and STEM students; ensure that underrepresented minorities and scientists with disabilities have equal opportunities in science and science-related fields; and modernize visa and immigration policies to attract and retain international talent.

In addition, to increase career-readiness for diverse career paths, STEM graduate students and postdoctoral scholars should have increased access to experiential learning opportunities (*i.e.*, internship programs) that expose them to, train them for, and help them establish networks within [nonacademic career paths of their choosing](#). The ASBMB urges Congress to allocate funds to the NIH to restart the [NIH BEST Awards](#) program and extend funding for similar programs, which funds awardee sites at institutions of higher education to broaden graduate and postdoctoral training opportunities for trainees who wish to pursue nonacademic career paths. The COVID-19 pandemic has underscored the [importance of nonacademic science-related positions](#), such as lab technicians, industry professionals, regulatory professionals and science communicators.

In order to be fully prepared for future pandemics, congressional leaders and policymakers must support the STEM workers — in all their forms. This support will ensure that the American research enterprise retains talented STEM professionals, ultimately leading to therapies and cures for the important health challenges of our time.

Investing in research infrastructure

The ASBMB recommends that Congress invest in modernizing research infrastructure across the federal government and with research institutions, as [recommended by the National Science and Technology Council](#). Federal investments in research infrastructure programs have [dropped since the 1970s](#) and, as a result, federal agencies are in need of funds to modernize their research facilities and networks. Programs like the NSF [Sustaining Infrastructure for Biological Research Program](#) and the Department of

Energy [Science Laboratories Infrastructure program](#) need to be updated to keep pace with emerging technologies and new equipment.

National labs across the country and research institutions have proved to be vital in responding to the COVID-19 pandemic and keeping the country safe. For example, the [Sandia National Laboratories have been instrumental](#) in helping healthcare workers stay safe while testing people for COVID-19 and producing powerful disinfectants to neutralize the SARS-CoV-2 virus. The Frederick National Laboratory for Cancer Research helped [address the need](#) for accurate coronavirus antibody testing.

In addition to investing in the national lab system, historically Black colleges and universities (HBCUs), minority-serving institutions (MSIs), and emerging research institutions (ERIs) are in desperate need of research infrastructure funds to support expanding their science-related programs. According to a [2018 Government Accountability Office report](#), 46% of HBCUs reported that their building spaces need repair or replacement. The report also found that HBCUs have faced significant challenges acquiring the robust revenue needed to undertake infrastructure projects.

As leading institutions researching health disparities, made ever more dire by the COVID-19 pandemic, HBCUs, MSIs, and ERIs must have access to funding to invest in new facilities, repair existing buildings, and purchase new instrumentation to better accommodate STEM majors and train the next generation of scientists and physicians. Investing in new facilities, repairing research labs, and providing funding to obtain new instrumentation at MSIs, HBCUs, and ERIs will expand opportunities for students at those institutions and, ultimately, promote diversity and equity in STEM to enhance [innovation and problem-solving](#) and prime the American research enterprise for success in combating pandemic-causing pathogens.