

America's innovation edge now in peril, says report

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A sweeping new report urges significant policy and funding action to ensure the United States does not lose the preeminent position in discovery and innovation it has built since the end of World War II.

"The Perils of Complacency: America at a Tipping Point in Science and Engineering" was released today by Rice University's Baker Institute for Public Policy and the American Academy of Arts and Sciences.

"The United States became a world power—economically, militarily and culturally—in significant part by placing a high priority on innovation, fueled by advances in science and technology," the report's authors write. "This priority, in turn, required investing in R&D, especially [fundamental research](#) conducted in universities and national laboratories across the fields of science, technology, engineering, mathematics and medicine."

China is projected to become the world's largest economy when measured by [gross domestic product](#) by 2030, according to the report. "By 2026, the 250th anniversary of the United States, China's strategic plan calls for it to be well on its way to becoming the unchallenged world leader in science, technology and innovation. These developments are perilous for America, which today, 50 years after the Apollo 11 moon landing, is at a tipping point in R&D," the authors wrote.

The report assesses progress and setbacks in the five years since an earlier report, "Restoring the Foundation: The Vital Role of Research in Preserving the American Dream."

It will be discussed in a virtual presentation this afternoon, titled "Inadequate Investment: America, China and the Future of Innovation," which will feature remarks from Norman Augustine, retired chairman and CEO of Lockheed Martin; Neal Lane, senior fellow in science and technology policy at the Baker Institute and former director of the National Science Foundation; and Jeanette Wing, the Avaneessians Director of the Data Science Institute at Columbia University and a professor of computer science.

"Recent developments are placing additional stress on the U.S. research system even as they underscore its indispensability in providing the fuel for American innovation and competitiveness as well as the know-how required to address the nation's many societal challenges," the authors write. "As this report was being prepared, a major coronavirus outbreak was impacting thousands of lives in China, America and other parts of the world. Meanwhile, [security concerns](#) have led some policymakers to propose draconian restrictions on the very same foreign researchers on whom we have come to rely to fill the persistent domestic talent gap in science and engineering."

One result of recent and proposed immigration restrictions is that other countries have become more competitive at attracting workers, the authors write. The report also says U.S. corporations are now more inclined to move R&D laboratories to other countries. "Compounding this problem is a continued weakness in U.S. support for basic and applied research; the fiscal year 2021 Presidential Budget Request would cut federal support for these categories by \$7.9 billion, or just over 9%," the authors wrote.

2020 priorities

The authors expand on the recommendations outlined in the 2014 report, which focused on R&D priorities, and urge action to strengthen STEM education and the American workforce.

"The nation's pre-K–12 public education system has been in crisis for decades, and the urgent need to improve student achievement was one of the seven priorities listed in the 'Innovation: An American Imperative' call to action that was supported by over 500 organizations across the country," the authors wrote. "The National Academies of Sciences, Engineering and Medicine, in its 'Gathering Storm' report, laid out a strategy to address this crisis."

The report also recommends states return to providing sustained public university funding to the levels per student, in real dollars, that were in place prior to the 2008 recession.

"Restoring state funding for universities will enable those institutions to better serve the educational needs of the state's citizens, raise the skill level of the workforce, support full employment, form stronger partnerships with local companies and contribute to the country's overall [science](#) and technology enterprise," the authors write.

"The recent tax placed on the earnings of endowments of (private) universities represents an altogether counterproductive trend and should be repealed promptly," the authors write. "Repealing this punitive tax will help universities control tuition, provide more financial aid and maintain modern research and teaching facilities. Doing so will also, hopefully, discourage further such narrowly targeted, counterproductive approaches."

More information: Restoring the Foundation: The Vital Role of Research in Preserving the American Dream:

[www.amacad.org/publication/res ... rving-american-dream](http://www.amacad.org/publication/restoring-american-dream)

Provided by Rice University

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