

HIGHER EDUCATION

A PUBLIC AND PRIVATE GOOD

INSTITUTIONS OF HIGHER EDUCATION SERVE OUR NATION

Universities and colleges are key societal institutions that shape our Nation by

- Discovering and disseminating new knowledge through science and engineering research.
- Developing an educated citizenry with science, technology, engineering, and mathematics (STEM) capabilities.

Our colleges and universities' combination of world-class research and widespread access to high quality education, coupled with the commitment of public resources to achieve these ends, have made the U.S. system of higher education a model for the world. This system prepares individuals for gainful employment while positioning the U.S. to compete in a global knowledge economy.

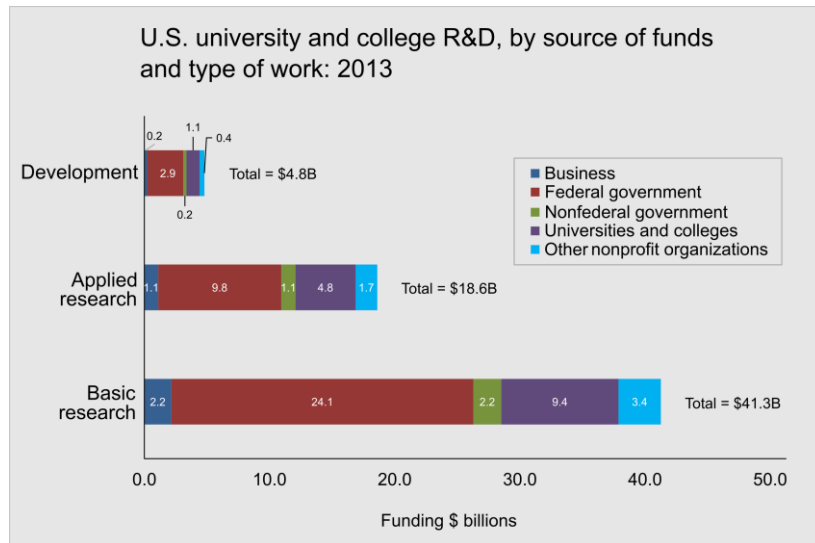
Amid current debates about the allocation of limited public funds and the future of higher education, we must sustain our higher educational institutions' essential research, education, and service missions through public investment.

INNOVATION THROUGH DISCOVERY RESEARCH

"Discovery" research (also called basic, early-stage, or fundamental research) expands our understanding of the natural world and the human experience. The innovation fueled by discovery research enhances U.S. economic competitiveness and improves the health, prosperity, and security of all Americans.

Researchers at U.S. colleges and universities conduct the majority of discovery research. They perform just over half (\$41.3B) of the Nation's \$80.5B public and private investment in basic research. They also conduct about 21% (\$18.6B) of the Nation's \$90.6B investment in applied research.

The Federal government is the primary source of support for research conducted at U.S. colleges and universities, funding 59% (\$24.1B) of the basic and 53% (\$9.8B) of the applied research. As the OECD notes, federal investment is vital because "the market does not provide sufficient incentives for private investment... owing to the non-appropriable, public good, intangible character of knowledge and the risky nature of research."



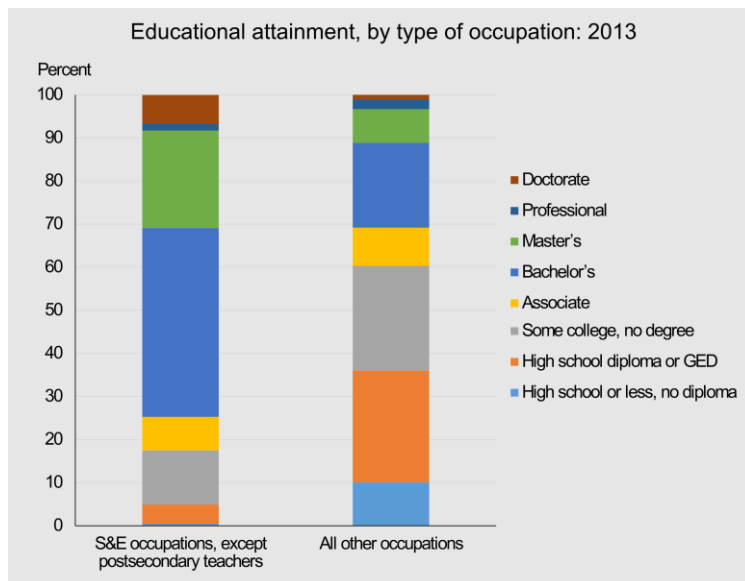
Research carried out at U.S. colleges and universities yields public and private benefits at the local, state, regional, and national levels. University-based research catalyzes long-term economic activity through inventions, patenting activities, the formation of new startups, and other technology transfer activities. **The products of university-based research – both those that can be monetized and those that cannot – ultimately contribute to our prosperity.**

HUMAN CAPITAL DEVELOPMENT

Human capital is our Nation's most vital resource; increasingly it will influence – if not determine – individual and national well-being in a knowledge- and technology-intensive global economy. In 2013, institutions of higher education enrolled over 20 million people in the U.S.

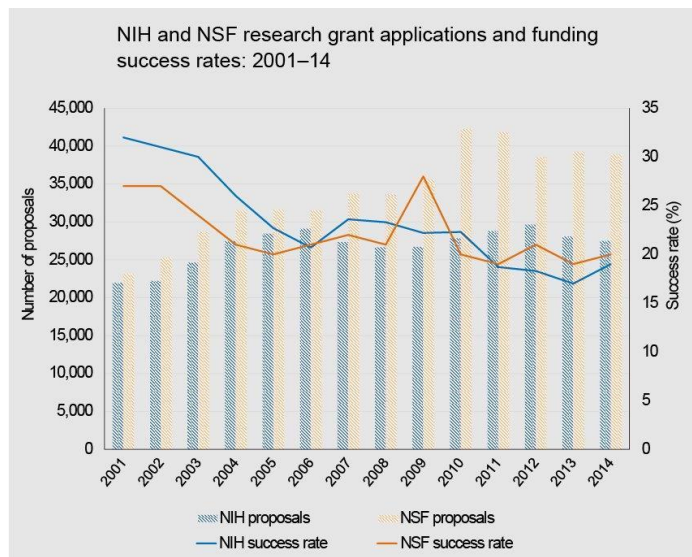
More and more jobs require post-secondary education. This is especially true in STEM occupations. About 75% of individuals employed in jobs classified as science and engineering (S&E) have earned a bachelor's degree or higher versus 31% of individuals in other occupations. In fact, in today's economy, the number of jobs requiring a bachelor's level of S&E expertise is increasing in S&E and non-S&E jobs alike.

But higher education is about more than preparation for a first job, salary, or other market indicators. Among its many benefits, **higher education serves the long-term public good by creating a scientifically-literate society.**



CHALLENGES & PRESSURES

A variety of indicators suggest that the public commitment to research & development (R&D) and higher education is wavering. Tight federal budgets have led to declines in federal investment in academic R&D.



In FY 2014, federal funding of higher education R&D failed to outpace inflation for the third straight year. When adjusted for inflation, federal funding of R&D at institutions of higher education declined by 5.1% between FY 2013 and FY 2014 and fell over 11% since its peak in FY 2011. **This marks the longest multi-year decline in federal funding since 1972.**

Declining support means that federal science agencies will be unable to fund an ever-larger amount of promising discovery research, and research grants become harder to obtain. **Current data on National Institutes of Health (NIH) and**

National Science Foundation (NSF) grant funding rates show that success rates at both agencies are hovering at or near 15-year lows.

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