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THE IMPACT OF AMERICAN UNIVERSITIES ON GLOBAL RESEARCH RANKINGS

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For decades, universities of the USA have remained key players in the global academic landscape. Their impact on global rankings is determined not only by the number of publications and citations, but also by their ability to set standards for academic integrity, showcase innovation, and foster international cooperation.

The United States has historically established itself as a leading nation in science. The Massachusetts Institute of Technology (MIT) has been ranked number one in the QS World University Rankings for 13 years and is a symbol of innovation in engineering and information technology. Harvard University is ranked 4th in the QS 2025 rankings and 5th in the QS 2026 rankings, and frequently tops the Times Higher Education (THE) rankings thanks to its academic reputation and research impact. Harvard university is renowned not only for its humanities and law schools, but also for its strong research in biomedicine and economics. Stanford University ranks 6th in the QS 2025 rankings and 3rd in the QS 2026 rankings. The university is considered a key hub for innovation in Silicon Valley driving the commercialisation of science and the development of start-ups. It is well known that several major companies, including Google, Hewlett-Packard (HP) and NVIDIA, grew thanks to the research environment of the Stanford university campus. The campus became a place where students, lecturers and researchers launched start-ups that later became global corporations. These companies took their first steps there, through research, incubators, university support or collaboration between

students and professors. The University of California, Berkeley ranked 17th in the QS 2026 rankings. It is known as a centre for fundamental research in physics, chemistry and other natural sciences. The university has a global reputation for its fundamental research (QS World University Rankings, 2025; 2026). The universities mentioned above are shaping the global landscape of education, science and innovation.

The reasons for the dominance of the USA lie in the large-scale funding of research through the National Science Foundation (NSF) and the National Institutes of Health (NIH), a well-developed laboratory infrastructure, and the active involvement of international students and researchers in scientific projects. Based on the NSF Science & Engineering Indicators 2024, the US spent over \$800 billion on R&D in 2021 (NSF, NSB, & NCSES, 2024).

According to Engel (2024), the role of science in American life has changed significantly over recent decades because of federal funding, which has transformed university culture and strengthened their role within the US scientific system. It was the postwar policy of the United States that laid the foundation for modern scientific leadership of universities. Historically, science has been a futile affair of privileged aristocrats and intellectuals. After the Second World War, science and its development became central to economic growth, military parity and national prestige. After the Second World War, US universities became key centres of science due to large-scale government investment in research. The government sought to secure a technological advantage in the context of the Cold War.

As stated on the NSF website (NSF, n.d.), the U.S. National Science Foundation (NSF) was established in 1950 by President Harry Truman, becoming the first federal agency to support fundamental research across all scientific disciplines. Furthermore, active funding of scientific projects was channelled through the Department of Defense and other agencies. E. G. Blevins, a historian of science and technology, argues that the NSF became the primary mechanism for supporting fundamental research and shaping post-war US science policy in general, including support for civilian research centres and STEM education (Blevins, 2025). Grants still provided by government agencies such as the NSF or NIH for fundamental and applied research enable universities to maintain modern laboratories and attract leading scientists from all over the world. An important complement to government funding is provided by private foundations, such as the Bill & Melinda Gates Foundation and the Rockefeller Foundation, which actively invest in medicine, education and innovation.

Collaboration between the academic community and industry – corporate partnerships – helped ensure that university research was rapidly transformed into innovation, thereby strengthening the economy (Prigge & Torraco, 2006). Such investments contributed to the emergence of new sectors, ranging from computer science to biotechnology. Universities became not only educational institutions but also centres of knowledge generation that shaped global scientific progress. Thanks to a combination of government grants, private

donations and business investment, US universities now have a stable financial base, enabling them to remain leaders in global science and to consistently rise in international rankings (Engel, 2024).

American universities participate in international consortia, that is, large networks of research institutes, universities and governments that collaborate on large-scale scientific projects. These include CERN (the European Organization for Nuclear Research), which is the world's largest centre for high-energy physics, and the home to the Large Hadron Collider. Thousands of scientists from dozens of countries collaborate here. Another example is the Human Genome Project which is an international initiative aimed at fully decoding the human genome. Alongside US research institutions, organizations from the UK, Japan, France, Germany and other countries took part in it. Such consortia are an example of how science transcends national interests and becomes a global endeavour, where success is only possible through collective effort.

The United States is also conducting global research in the field of artificial intelligence. Its initiatives include the development of machine learning algorithms, the establishment of ethical standards for the use of AI, and the formation of international partnerships to address global challenges – ranging from healthcare and education to security and climate change (U.S. Department, 2024).

The influence of American universities on global science is also evident in their prolific publishing output. Researchers point out that scientists from Harvard, MIT, Stanford and other universities regularly publish articles in leading journals included in the Scopus scientometric database, and shape the global scientific agenda (Schneider et al., 2024). The high citation rates of these works attest to their significance and their use by researchers worldwide. In addition, US universities are often the source of new areas of research: these are places where modern computer science, biotechnology, artificial intelligence and nanotechnology originated.

It is also worth noting that the US has played a key role in establishing global standards in science. American universities were the first to introduce plagiarism detection systems and set up ethics committees, which formed the foundations for academic integrity worldwide. The Open Access policy, which is actively supported in the US, has become a global standard.

Consequently, owing to their vast resources and interdisciplinary approaches, American universities are creating innovative research environments that shape global scientific standards. Their discoveries not only boost rankings but also determine the trajectory of global scientific development, giving rise to new technologies and methods that transform society and the economy. At the same time, it is worth noting the global growth in the research influence of Chinese universities in recent years. According to the Nature Index 2025, Harvard ranks second with 3,956 publications, behind the Chinese Academy of Sciences (CAS) (11,480 publications), followed by the

Chinese universities – University of Science and Technology of China (USTC) (3,475 publications), Zhejiang University (ZJU) (2,657 publications) and Peking University (PKU) (3,811 publications) (Nature Index, 2025). A comparison of the scientific influence of the US and China will help track changes in the global balance of power and is a promising topic for further research.

Keywords: innovative research environment, universities of the USA, university rankings, university research.

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DIGITAL TRANSFORMATION OF LANGUAGE TRAINING FOR FUTURE MILITARY OFFICERS

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