

# US will no longer dominate science and research

February 18 2011

---

A shift in the global research landscape will reposition the United States as a major partner, but not the dominant leader, in science and technology research in the coming decade, according to a Penn State researcher. However, the U.S. could benefit from this research shift if it adopts a policy of knowledge sharing with the growing global community of researchers.

"What is emerging is a global science system in which the U.S. will be one player among many," said Caroline Wagner, associate professor of international affairs, who presented her findings today (Feb. 18) at the annual meeting of the American Association for the Advancement of Science in Washington, D.C.

The entrance of more nations into global science has changed the research landscape. From 1996 to 2008, the share of papers published by U.S. [researchers](#) dropped 20 percent. Wagner attributes much of this output shift not to a drop in U.S. research efforts, but to the exponentially increasing research conducted in developing countries, such as China and India.

China has already surpassed the U.S. in the output of research papers in the fields of natural science and engineering. Based on current trends, China will publish more papers in all fields by 2015. Although China still lags in quality, according to Wagner, that gap is closing, too.

As enrollments in Chinese universities swell, there will also be more

researchers in China than there are in the U.S., she noted.

Typical recommendations to spur U.S. research, such as spending more money on research, may not restore American preeminence in science and technology.

"Some consider America's loss in the 'numbers game' in research to be a scary scenario, but the answer may not be in spending more money," said Wagner. "The system may be operating at full capacity—and the law of diminishing returns exists in [science](#), just as it does in other sectors."

Instead of this low return-on-investment strategy, Wagner recommended that the U.S. rely on a more efficient knowledge-sharing strategy by tapping experts from other countries who have developed more knowledge and better skills than U.S. researchers in certain fields. Other nations would, in turn, have access to U.S. scientists to conduct research in fields where they are most proficient.

Wagner refers to the possibility of a global research community as the new "invisible college," a term coined in the 17th century to describe the connections among researchers from diverse disciplines and places who created the world's first scientific society.

One fallacy is that the Internet will naturally create this global research community, said Wagner. Despite the presence of global communication systems, such as the Internet and mobile phone technology, research remains a difficult network to navigate, especially for scientists in developing countries.

"The Internet helps speed up the rate of communication, but doesn't necessarily improve access for developing countries," Wagner said. "Since face-to-face contact is still the preferred way to connect with fellow researchers, participants can still be blocked by the cost of travel

and access to research papers, for example."

Provided by Pennsylvania State University

Citation: US will no longer dominate science and research (2011, February 18) retrieved 19 April 2024 from <https://phys.org/news/2011-02-longer-dominate-science.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.