

# THE NATIONAL ACADEMIES

*Advisers to the Nation on Science, Engineering, and Medicine*

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## FOR IMMEDIATE RELEASE

### **TO MAINTAIN NATIONAL SECURITY, U.S. POLICIES SHOULD CONTINUE TO PROMOTE OPEN EXCHANGE OF RESEARCH**

WASHINGTON – To strengthen the essential role that science and technology play in maintaining national and economic security, the United States should ensure the open exchange of unclassified research despite the small risk that it could be misused for harm by terrorists or rogue nations, says a new report by the National Research Council. Because science and technology are truly global pursuits, U.S. universities and research institutions must continue to welcome foreign-born science and engineering students, said the committee of former national security leaders and senior university researchers and administrators that wrote the report.

While concerns about certain types of research findings falling into the wrong hands are legitimate and safeguards are needed, the gains in science and technology that flow from the free exchange of information far outweigh the slight risks, the report says. Extreme measures to curtail the flow of essential information or people would significantly disrupt advances that are critical to U.S. military and economic security. Meeting the challenges of future technological or biological threats depends upon developments that can only come from long-term academic research.

"In the years following the Sept. 11 attacks, research institutions have established policies and procedures that address concerns about security," said committee co-chair Jacques S. Gansler, former U.S. undersecretary of defense and vice president for research at the University of Maryland, College Park. "However, both the security and scientific communities agree that losing our leading edge in science and technology is one of the greatest threats to national security. Unnecessary or ill-conceived restrictions could jeopardize the scientific and technical progress that our nation depends upon."

Although National Security Decision Directive 189 (NSDD 189) was enacted to assure that basic research remain open to publication and foreign participation, many government policies and practices have effectively reversed this in recent years, the report says. To ensure that both security and scientific interests are protected, the federal government should establish a standing entity, preferably a Science and Security Commission, that would review policies regarding the exchange of information and the participation of foreign-born scientists and students

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in research. The report suggests that the commission be co-chaired by the national security adviser and the director of the White House Office of Science and Technology Policy, and include representatives from academic research institutions and national security agencies.

"The U.S. security and research communities need to work together to weigh the latest information about potential threats and ensure the continuation of scientific research that could help mitigate them," said committee co-chair Alice P. Gast, president of Lehigh University, Bethlehem, Pa. "Establishing this standing body would allow the nation to strike the appropriate balance between science and security."

## Taking Action

After holding a series of regional meetings on university campuses with a broad range of officials from security and academic research institutions, the National Research Council committee identified specific actions that should be taken to foster open exchange of scientific research -- all of which could be addressed by the proposed Science and Security Commission. They include:

- *Ensuring that grants and contracts awarded to U.S. universities and research institutions do not restrict the publication of unclassified research.* Although the principles and much of the wording of NSDD 189 is incorporated into federal acquisition regulations, contracting officers and universities sometimes overlook them, the report says. In addition, federal funding agencies should make clear to industrial grant recipients that restrictive clauses governing publication or the participation of foreign-born scientists should not be passed down to universities subcontracted to conduct basic research.
- *Reviewing the number of research projects that are categorized as "sensitive but unclassified."* Numerous concerns have been raised about the increasing use of this designation, which limits the scientific community's right to publish the results of basic research and restricts participation of foreign-born researchers. A survey that examines the frequency of these restrictions and other restrictive clauses should be performed annually.
- *Working with the U.S. departments of Commerce and State to conduct regular, governmentwide reviews of export-control policy.* Both agencies maintain lists that bar the export of certain technologies and information to foreign countries. However, many of the restricted items are technologically outdated, widely available, or not controlled in other countries, the report says. In addition, reviews are needed to justify limits on "deemed exports," which refers to the transfer of information to a foreign national within the United States, such as a foreign-born scientist in a research laboratory or a graduate student.
- *Fostering a productive environment for international science and engineering scholars in the United States.* Foreign-born researchers are significant contributors to U.S. science and technology endeavors, the report says. In fact, between 1990 and 2004, more than one-third of all Nobel prizes in the United States have gone to foreign-born recipients. The success of many U.S. universities and

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research institutions depends on attracting the best and brightest students both at home and abroad. After tighter visa restrictions were enforced following the Sept. 11 attacks, international student enrollment decreased dramatically. Although some visa restrictions have been lifted and foreign enrollment is again on the rise, the visa clearance process should continue to be monitored, the report says. In addition, the government and Congress should consider extending temporary visas for those working in high-demand research areas and creating a new nonimmigrant visa category for doctoral and postdoctoral scholars. And the Technology Alert List -- which restricts some non-U.S. students and scientists from working on legitimate technologies that could be misused to threaten national security -- should be revised to include only areas of study that have explicit implications for national security.

- *Developing policies and procedures for international oversight of biological and life sciences research that could be used for harm.* The government must continue to develop policies and procedures for the oversight of dual-use life sciences research that fosters international collaboration and control. Local monitoring mechanisms should also be coordinated.

## **Forging Partnerships**

To improve relations between the scientific research and national security communities, universities and federal agencies should create opportunities for university scientists to participate in government security fellowships, and for members of the national security community to participate in university fellowships, the report says. In addition, university leaders must continue to educate administrators, faculty, and students about security, export controls, and other relevant policies and procedures and ensure that they are in compliance.

The report also calls on the National Science Foundation, the departments of Defense and Homeland Security, and intelligence agencies to increase funding for the social sciences, particularly languages and area studies. Such research could improve understanding of the social, cultural, and political bases of terrorism and identify potential responses. The agencies also should fund additional research in security risk assessment and cost-benefit analyses of security strategies affecting university research.

The study was sponsored by the National Institutes of Health, U.S. Department of Health and Human Services, and the National Science Foundation. The National Academy of Sciences, National Academy of Engineering, Institute of Medicine, and National Research Council make up the National Academies. They are private, nonprofit institutions that provide science, technology, and health policy advice under a congressional charter. The Research Council is the principal operating agency of the National Academy of Sciences and the National Academy of Engineering. A committee roster follows.

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Copies of *Science and Security in a Post-9/11 World: A Report Based on Regional Discussions Between the Science and Security Communities* are available from the National Academies Press; tel. 202-334-3313 or 1-800-624-6242 or on the Internet

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at <http://www.nap.edu>. Reporters may obtain a pre-publication copy from the Office of News and Public Information (contacts listed above). In addition, a podcast of the public briefing held to release this report is available at <http://national-academies.org/podcast>.

[ This news release and report are available at <http://national-academies.org> ]

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