



Science and Security in a Post 9/11 World A Report Based on Regional Discussions Between the Science and Security Communities (2007)

The tragedy of September 11, 2001, the subsequent anthrax attacks, and ongoing terror threats have changed national and international security. U.S. research institutions have established policies and procedures that address concerns about security including terrorists posing as university students and terrorists using technology available at universities against the U.S. Even with these threats, the U.S. needs to maintain an open science and engineering environment to maintain its economic and national security. The U.S. does not have exclusive ownership of knowledge, so it is critical that we continue to attract and engage the best and the brightest from around the world.

While concerns about certain research findings falling into the wrong hands are legitimate and safeguards are necessary, the gains in science and technology that result from the free exchange of information far outweigh the slight risks. The success of U.S. science and engineering has been built on a system of information sharing and open communication, not only among U.S. institutions, but also with the international science and technology communities. The global scientific enterprise thrives on the movement of students and scholars across borders and among institutions. Therefore, extreme measures to limit 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 on developments that can only come from long-term academic research. This report concludes that it is critical to keep U.S. universities open—welcoming students and scholars from around the world and participating in international research—while limiting access when warranted and placing appropriate restrictions on well-defined high-risk areas.

After holding a series of regional meetings on university campuses with officials from security and academic research institutions, a National Research Council committee identified the following actions that should be taken to foster open exchange of scientific research—all of which could be addressed by a proposed Science and Security Commission to be co-chaired by the National Security Advisor and the Director of the Office of Science and Technology Policy.

POLICIES FOR OPENNESS AND INFORMATION CONTROL

Openness and communication are important foundations of modern science. Developing and implementing measures to control access to sensitive information must be considered within the context of overall costs to the research community and to the public, and with an eye toward the anticipated effectiveness of measures to enhance security. For example, it is important to ensure that grants and contracts awarded to U.S. universities and research institutions do not restrict the publication of unclassified research.

THE INTERNATIONALIZATION OF U.S. SCIENCE AND ENGINEERING

Science thrives when there is a free exchange of information and when scientists and engineers are able to cross borders to train, collaborate, and share knowledge. Participation of foreign-born scientists and engineers in U.S. laboratories and classrooms warrants increased efforts to ensure that policies regarding their movement, attendance at scientific meetings, and collaborative activities are adequate and not self-defeating. The visa clearance process should continue to be monitored. The government and Congress should also consider extending temporary visas for those working in high-demand research areas and creating a new nonimmigrant visa category for doctoral and postdoctoral scholars. In addition, 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.

BIOSECURITY AND DUAL-USE RESEARCH IN THE LIFE SCIENCES

The U.S. government should continue to develop policies and procedures for the oversight of dual-use life sciences research that foster international collaboration and control. Local monitoring mechanisms should also be coordinated. To strengthen and harmonize the institutional review of life sciences research, the Department of Health and Human Services, in conjunction with other agencies that conduct and fund life sciences research, should develop an education program focused on risk-based biosafety and biosecurity review.

RESEARCH PRIORITIES

The report 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.

PARTNERSHIPS FOR SCIENCE AND SECURITY

It is imperative to develop and maintain communication channels between the security and academic research communities in order to facilitate ongoing discussion and sharing of information. 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. In addition, university leaders need to continue to educate administrators, faculty, and students about security, export controls, and other relevant policies and procedures and ensure that they are in compliance.

COMMITTEE ON A NEW GOVERNMENT-UNIVERSITY PARTNERSHIP FOR SCIENCE AND SECURITY

Jacques S. Gansler (Co-chair), University of Maryland

Alice P. Gast (Co-chair), Lehigh University

Arthur Bienenstock, Stanford University

Louann Burnett, Vanderbilt University

Karen Cook, Stanford University

John A. Gordon, General (ret.), U.S. Air Force

Gary Hart, University of Colorado

Michale J. Imperiale, University of Michigan

Richard A. Meserve, Carnegie Institution of Washington

Julie T. Norris, Massachusetts Institute of Technology

Elizabeth Rindskopf Parker, University of the Pacific

Anne-Marie Mazza, The National Academies

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