

# 2004 **ANNUAL REPORT**

## **THE GOVERNMENT-UNIVERSITY-INDUSTRY RESEARCH ROUNDTABLE**

NATIONAL RESEARCH COUNCIL OF THE NATIONAL ACADEMIES  
2101 CONSTITUTION AVENUE, N.W., WASHINGTON, DC 20418

# MESSAGE FROM THE CO-CHAIRS

**T**he GUIRR membership has raised important questions about the rapid advance of globalization and its impact on the nation's science and technology research enterprise. In 2004 GUIRR examined various aspects of this issue, including the overseas migration of industry R&D funding, U.S. technological leadership, and the competitiveness of the national science and engineering workforce. GUIRR's February meeting featured a panel discussion on policy strategies for increasing national competitiveness and encouraging innovation. Guest speakers from the Organisation for Economic Co-operation and Development also informed the GUIRR membership of initiatives undertaken in the European Union to attract and retain science and engineering talent in the face of globalization. The June meeting focused on the globalization of universities, and the October meeting looked at issues pertaining to security and the global human capital flows of scientists and engineers. A panel addressed one of the top concerns of GUIRR's membership: the fundamental question of whether current screening processes place us at a competitive disadvantage for the "best and brightest."



WILLIAM H. JOYCE



MARYE ANNE FOX

Building on that concern, GUIRR assembled a multi-agency working group (including 10 GUIRR members) to examine the potential implications of the findings and recommendations of the Department of Commerce's March 2004 Inspector General's report governing deemed exports to foreign nationals at U.S. research universities. The concern stems from members in the university-related and science research community that the recommendations, if implemented, would effectively prohibit the access of foreign students, postdocs, and visiting scholars, to equipment in U.S. university laboratories. The GUIRR working group has coordinated efforts with the American Association of Universities and the Council on Governmental Relations to narrow the scope of issues. Reflecting another aspect of university security, GUIRR also held a workshop in 2004 to illustrate methods with which universities could best promote homeland security education.

In a separate but equally important area of GUIRR activity, the Federal Demonstration Partnership (FDP) continues to work on broadening participation of underrepresented groups in the FDP, including outreach to minority-serving institutions. In the current Phase IV, a new category of membership for emerging research institutions was created for those institutions with less than \$15 million in research expenditures. In 2004 the FDP welcomed Florida A&M, Morgan State University, Rowan University, the University of the District of Columbia, and the University of Maryland's Center for Environmental Science, as emerging research institute members. In the coming year, the FDP intends to work with these members and representatives from minority-serving institutions to develop demonstrations that are of interest to smaller institutions.

Globalization is changing the established framework of the science and engineering research enterprise. It has pushed to the forefront a number of related issues concerning innovation, competitive advantage, and cross-border collaborations. In 2005 we are likely to see greater public interest in these and other topics that are resulting from an outgrowth of the globalization debate. GUIRR's unique ability to engage leaders from the government, university, and industry sectors will allow us to address these and any other challenges the coming year may bring.

A handwritten signature in dark ink that reads "Marye Anne Fox".

Marye Anne Fox  
Co-Chair

A handwritten signature in dark ink that reads "William H. Joyce".

William H. Joyce  
Co-Chair

# INTRODUCTION TO THE ROUNDTABLE

**GUIRR** was created in 1984 in response to a report of the National Commission on Research, which called for an institutionalized forum to facilitate dialogue between the top leaders of government and nongovernment research organizations. GUIRR's formal mission, revised in 1995, is

*to convene senior-most representatives from government, universities, and industry to define and explore critical issues related to the national and global science and technology agenda that are of shared interest; to frame the next critical question stemming from current debate and analysis; and to incubate activities of ongoing value to the stakeholders. This forum will be designed to facilitate candid dialogue among participants, to foster self-implementing activities, and, where appropriate, to carry awareness of consequences to the wider public.*

The Roundtable is sponsored by the National Academy of Sciences, the National Academy of Engineering, and the Institute of Medicine. It has three categories of membership: (1) individual council members (appointed by the chair of the National Research Council; ex-officio appointment for federal members and the National Academies presidents); (2) individual council associates (identified delegates of the ex-officio council members, plus the chair of the Federal Demonstration Partnership); and (3) institutional members (dues-paying University-Industry Partnerships).





WAYNE JOHNSON, STEPHEN LUBARD, AND BILL BERRY

# GUIRR ACTIVITIES IN 2004

## CORPORATE R&D INVESTMENT: A QUESTION OF HERE OR THERE?

GUIRR is currently partnering with the Industrial Research Institute, the American Chemical Society, and the European Industrial Research Management Association to assess the inward and outward flows of industrial R&D activity. Using a sophisticated survey of CTO's and CEO's of R&D-performing companies in both the United States and Europe, the project seeks to identify the influential factors leading to the decision to site R&D facilities abroad, and then assign weights to each. It is anticipated that the factors relevant to relocating research may be different from those for relocating development, and that the factor weights may also differ for industry sectors. Knowledge of the relative importance of different factors should help target policy making for countries seeking to attract or retain R&D activities.

Internationally recognized economists Marie and Jerry Thursby are conducting the survey under the auspices of the Georgia Institute of Technology and Emory University. The survey design was completed in 2004 and is currently being beta tested. The final report is expected in the fall of 2005.

## DEEMED EXPORTS WORKING GROUP

In 2004 GUIRR formed a working group to address concerns raised in the university science research community in response to the March 2004 Department of Commerce Inspector General's report, *Deemed Export Controls May Not Stop the Transfer of Sensitive Technology to Foreign Nationals in the U.S.* (IPE-16176). The working group has closely coordinated its efforts with those already underway at the American Association of Universities and the Council on Governmental Relations. The working group is focusing on the quantity of common laboratory equipment on the Commerce Control List, and the Inspector General's opinion that universities are not exempt from adhering to these controls under the "fundamental research exemption." If implemented, these recommendations could effectively prohibit the access of foreign students, postdocs, and visiting scholars to equipment in U.S. university laboratories.



BILL GUIDERA, FRED QUAN, AL JOHNSON, RICHARD PEARSON, AND SUZY LEBOLD

Through a series of conference calls and leadership events, the federal, industry, and university members of the GUIRR working group were able to provide perspective on the challenge facing the universities. Their discussions in 2004 resulted in clarifications on how the policies might be applied, and what the resulting outcomes might be for national competitiveness and national security.





DHS WORKSHOP PARTICIPANT

## EDUCATIONAL PARADIGMS FOR HOMELAND SECURITY

Following the events of September 11, 2001, the U.S. academic community responded with numerous course offerings, concentrations, certificates, and degree programs for students wishing to further their knowledge of homeland security. To this end, the Department of Homeland Security, National Institutes of Health, Environmental Protection Agency, Department of Defense, Department of Agriculture, and other agencies funded major activities in risk assessment, chemical and biological sensors, remediation technologies, and a host of other research areas. Members of the science research community posed a question about whether there ought to be an education agenda, in addition to a research agenda, to ensure the nation's security.

The National Academies' Policy and Global Affairs division, in conjunction with GUIRR, assembled a committee to more clearly define an agenda for the community and ultimately for the agencies involved in homeland protection. The committee was aided by a workshop on educational initiatives in homeland security held in April 2004 that:

- discussed whether there were core pedagogical and skills-based homeland security program needs;
- audited and evaluated current and proposed education programs focusing on various aspects of homeland security;
- commented on possible parallelism between the development of homeland security as an academic field and area studies, international relations, and science policy;
- suggested potential curricula needs, particularly those that involve interdisciplinary aspects.



LARRY RHOADES

The final report was released in October 2004.

For a copy of the publication visit <http://www.nap.edu/catalog/11141.html>.

## NATIONAL LABORATORY-UNIVERSITY COLLABORATIONS

This report of best practices and remaining challenges to collaborations between universities and the DOE national laboratories was released in December 2004. The report, based on a workshop held in July 2003, focused on issues that transcend all extramural collaboration types but manifest themselves differently at each level—such as using collaborations to augment institutional human resources, resolving classification and access issues in sensitive projects, identifying financial resources for joint work, and addressing cultural issues. The major topics covered in the report are (1) incentives and structures, (2) user facilities, (3) classified work, and (4) human resources. The report stimulated a session at the annual meeting of the National Council of University Research Administrators and is expected to lead to further GUIRR and Federal Demonstration Partnership efforts in the area of university-national laboratory contracting practices. For a copy of the publication visit <http://www.nap.edu/catalog/11190.html>.



# UNIVERSITY-INDUSTRY PARTNERSHIP PROJECT

(formerly Re-Engineering Intellectual Property Rights Project)

In 2003 GUIRR formed a collaboration with the National Council of University Research Administrators and the Industrial Research Institute to provide national leadership in changing the approach of both universities and industry to the negotiation of intellectual property agreements. The project began in August of 2003 and has since held three meetings of approximately 35 invited delegates representing industry, universities, and government. The work of this project is divided among the following teams:

- **Black Team:** Develop a statement of guiding principles for decision and policy makers to serve as a guide for future approaches to intellectual property and as a sign-on document for leaders in the two sectors.
- **Red and Green Teams:** Develop an educational training tool for practitioners that allows them to easily follow the guiding principles when constructing specific research partnership agreements. In-depth information on options, background rationale, and clauses specific to circumstances will be included.
- **Blue Team:** Conceptualize an ongoing forum similar to the Federal Demonstration Partnership, which would be capable of resolving outstanding issues with demonstrations by university-industry teams. Conceptualize and implement the first such demonstration.

In 2004 the group worked on a statement of guiding principles, currently in draft form, to be shared with outside groups in an effort to expand buy-in from the community. Development of the supporting toolkit and a demonstration forum will continue in the two additional formal meetings before the final summit is held in late spring of 2006.



JEROME GROSSMAN AND JOHN BROWN



JOHN MARBURGER AND ANTOINETTE BETSCHART

## LEADERSHIP DINNER SERIES

A series of leadership dinners launched in 2002 allows the highest levels of federal representation in GUIRR to informally engage in discussions on important issues. In May 2004 the focus of the dinner series was agroterrorism. Invitees examined the vulnerabilities in the agricultural food chain from a research perspective and discussed strategies for minimizing possible threats. Topics under consideration for the 2005 dinner series include deemed exports and national innovation strategies.



## FEDERAL DEMONSTRATION PARTNERSHIP

The Federal Demonstration Partnership is a unique cooperative initiative comprising 10 federal agencies and 98 institutional recipients of federal funds; its purpose is to reduce the administrative burdens associated with research grants and contracts. The interaction of the partnership's 300 or so university and federal members takes place at three annual meetings and more extensively in the many collaborative working groups and task forces that it forms to develop specific work products. The FDP is a unique forum for individuals from universities and nonprofits to collaborate with federal agency officials to improve the national research enterprise. At its regular meetings, FDP members hold spirited and frank discussions, identify problems, and develop action plans for change. These new ways of doing business are then tested in the real world before putting them into effect. GUIRR currently provides staff support for FDP activities and committees, as well as logistical support for FDP's three annual meetings. In 2004, the FDP focused on:



GIL OMENN

- illustrating the relationship and trade-offs of regulatory burden, research productivity, and administrative support;
- monitoring compliance issues, including visa processing for foreign scholars and students, sensitive but unclassified information dissemination, and streamlining processes involving select agents;
- supporting the goals of the National Science and Technology Council's Research Business Models Subcommittee activities that address important policy implications arising from the changing nature of scientific research, and examining the effects of these changes on business models for the conduct of federally sponsored scientific research;
- providing technical expertise to grants.gov, e-gov, and the NIH Commons initiative for electronic grant delivery;
- identifying ways to broaden participation of underrepresented populations in sponsored research, including outreach to minority-serving institutions;
- recommending ways to streamline the audit requirements for universities working with other universities as subrecipients.

## FORUM ON INFORMATION TECHNOLOGY AND RESEARCH UNIVERSITIES

The forum fosters national and campus-based dialogues aimed at helping research universities and their stakeholders to effectively meet the challenges of the digital age. During 2004 the forum launched a series of workshops attended by executive leadership teams from leading institutions. James J. Duderstadt serves as forum chair and Wm. A. Wulf serves as program chair on behalf of the National Academies. Forum activities are supported by Atlantic Philanthropies. The forum web site ([nationalacademies.org/itru](http://nationalacademies.org/itru)) features the news and resources weblog (frequently updated), as well as links to background materials and organizations working in the area of information technology and the research university. The forum also organizes occasional luncheon seminars for the policy community.

## GUIRR PUBLICATIONS

- National Laboratories and Universities: Building New Ways to Work Together. Washington, D.C.: National Academies Press, 2004.
- Frameworks for Higher Education in Homeland Security. Washington, D.C.: National Academies Press, 2004.





# FINANCIAL SUPPORT OF THE ROUNDTABLE

GUIRR's accomplishments continue to be attributable in large part to the participation and contribution of the federal R&D agencies. Core funding enables GUIRR to quickly take on projects of its members' choosing rather than waiting for a specific contract or grant to cover an activity. As GUIRR supporters, federal members have full participation rights in the closed-door forums where high-level issues and concerns are debated by corporate CEO's, university presidents, and federal science and technology agency heads. In 2004 GUIRR received core support from the following federal agencies:

Department of Defense  
Department of Energy  
Department of Homeland Security  
National Institutes of Health  
National Institute of Standards and Technology  
National Science Foundation  
Department of Agriculture

The University-Industry Partners Program is an important component of both the roundtable membership and its funding base. These institutional members enhance the roundtable's ability to identify and respond to an array of issues, including science and engineering education, and the impact of research commercialization on regional economic growth. The partnerships that provided support during 2004 were:

Georgia Institute of Technology/Boeing  
Massachusetts Institute of Technology/Northrop Grumman  
Stanford University/IBM Almaden Research Center  
University of California, Davis /Mars, Incorporated  
University of California, Los Angeles/Hewlett-Packard Company  
University of Texas at Austin/Semiconductor Research Corporation  
University of Washington/Battelle Pacific Northwest National Laboratory  
Washington University/Pharmacia

## **In addition, project-specific support in 2004 was provided by:**

Alfred P. Sloan Foundation  
Ewing Marion Kauffman Foundation  
Wallace H. Coulter Foundation  
Boeing, Inc.

Extrude Hone Corporation  
Hewlett-Packard Company  
IBM  
Microsoft Corporation





# THE ROUNDTABLE COUNCIL (DECEMBER 2004)

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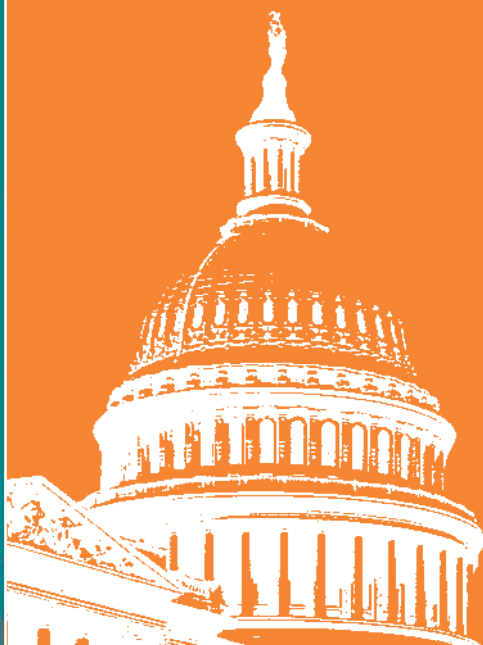
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For more information about GUIRR and  
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