

Government-University-Industry Research Roundtable (GUIRR)

Improving the Nation's Research
Infrastructure Through
Access, Insights, and Outcomes

<http://www.nas.org/guirr>

Problems Worth Solving

The compelling problems of our nation are too complex for any one university, company or federal agency to solve.

Problems Worth Solving

GUIRR focuses on challenges at the interface of government, university, and industry that have a science and/or technology component and are critical to ensuring U.S. competitiveness.

Examples of these focal issues include:

- Developing a strong science and engineering workforce
- Examining the efficacy and impact of export controls and visa policy in a globalized world
- Exploring university-industry approaches to intellectual property
- Examining prospects for a national innovation infrastructure
- Educating for homeland security in the next generation
- Overcoming barriers to large-scale data integration
- Exploring additional means to safeguard the nation's food supply
- Assuring that mineral resource vulnerability does not hinder U.S. competitiveness

Access to Solve Them

- **Membership of GUIRR spans all three sectors (G,U,I)**
 - University Presidents and VPs of Research
 - Corporate CEOs and VPs of Research
 - Federal R&D Agency heads and senior staff-delegates
- **Three large meetings a year convene the entire membership**
 - Introduce topics that are *just emerging* at the leadership level in one sector, but affect other sectors
 - Bring in outside experts to provide unique perspectives
 - Planned discussion and debate
 - Informal networking

Access to Solve Them

What makes our meetings different?

- Unique mix of sectors (“I come here to understand how the other side thinks”)
- Leadership level attendees – highly centralized knowledge in the room
- Ability of staff to bring in, on request, the senior-most experts and leaders on any given topic (National Academies “convening power”)
- “Neutral Turf and Closed Doors”; very frank discussions

Early Insights (three examples)

- **International Research Collaborations:**

In 2008, GUIRR co-chair Dan Mote notes an increase in cross-sector collaboration across international borders but absence of any recognized guidelines or national protocol on how best to engage.

- **Food Safety:**

Also in 2008, melamine found in milk products from China prompts a GUIRR member food company to encourage broader cross-sector examination of food safety issues across the entire supply chain – with discussion underway before several well-publicized salmonella outbreaks later that year

- **Diminishing Natural Resources:**

In 2009, GUIRR picks up on several news stories regarding China's purchase of mineral-rich land in Australia, Africa, and elsewhere; then hears from a White House consultant that little national attention is being paid to materials sourcing, availability, and/or sustainability.

Rapid Action

International Research Collaboration

- GUIRR company, university and government members share innovative frameworks for technology transfer that allow for full global engagement during June 2009 meeting (following June 2008 meeting on “New Partnerships on a Global Platform”)
- A working group quickly comes together with plans to assemble a widely diverse and inclusive group of subject matter experts willing to contribute to the critical thinking and discussion necessary to create a body of knowledge essential to the creation of a primer and web-based reference materials (fundraising underway for focused workshop set for July 2010)
- An online portal is created on the National Academies website to collect and maintain articles and documents of relevance to international research collaboration, addressing such issues as currency and financial matters, evaluation approaches, legal strategies, IP, research integrity, research management, liability and insurance, and others

Outcomes

International Research Collaboration

- Interest in examining the issues is widespread; representatives from DHHS-ORI, NIH, DOD, AFOSR, NSF, PAHO, several companies and universities join working group, with 7 conference calls and 3 face-to-face meetings held since July 2008
- Articles about GUIRR intentions appear in several publications, including: *NCURA Magazine*, the Air Force Research Laboratory *International Notes*, and the DHHS *Office of Research Integrity Newsletter*.
- DOD (Air Force + Army + Navy) and NIH commit financial support for workshop; other agencies confirm interest and invite proposals
- Two distinguishes NAE members from outside the U.S. join planning committee:
 - **Dr. Giulia Del Brenna**
Administrator in the European Commission
DG Enterprise and Industry
Italian; resides in Brussels
 - **Prof. KunMo Chung**
Served twice as Minister of Science and Technology in South Korea
Former chairman and CEO of the Korea Science and Engineering Foundation
Former President of the Korean Academy of Science and Technology
Resides in Seoul, Korea

Rapid Action

Food Safety

- Obama Administration establishes new Food Safety Working Group; GUIRR member organizations emphasize need for R&D on top of regulation and inspection
- Following February 2009 member meeting on the topic, GUIRR hosts “Technology Workshop on Food Safety and National Defense” (September 2009) with goal to examine how companies and universities might work with/tap the talent and research capacity of the national labs in repurposing technology (military detection technology for use in food safety, for example)
- Stephen Sundlof, Director, Center for Food Safety and Applied Nutrition, FDA, attended; outlined FDA’s Food Program
- Seventy participants total – representatives from DHS, FDA, USDA, CDC, NSC, 10 national laboratories, several universities, and multiple companies (Mars Inc, 3M, Cargill, Lockheed Martin, IBM)
- Three specific questions addressed in workshop:
 - What technologies already exist in the national laboratory network that could be readily applied to safeguarding the nation’s food supply?
 - What research programs already exist in the national laboratory network that could be structured to address problems related to food safety?
 - What models of collaboration should be considered to optimize the interaction between the national laboratories, industry, and universities to ensure these asset are capable of fulfilling their potential to minimize the current and future threats to the safety of the nation’s food supply?

Outcomes

Food Safety

- IBM confirms new interest in food safety data management following GUIRR workshop participation; pledges collaboration with other food companies
- Jerold Mande, Acting Under Secretary for Food Safety for USDA, commends GUIRR for enlisting support of and engagement by the national labs; notes agency intentions – thanks to workshop – to reach out to the labs to better understand what CDC currently terms “unexplained food borne illness” (80% of food-borne illnesses, 70% of hospitalizations, and 65% of deaths are caused by agents other than the 30 pathogens they track)
- GUIRR working group members meet with FDA Commissioner Margaret Hamburg in early February 2010; encourage greater cross-sector collaboration in addressing food safety challenges, including to the national labs – suggestion met with considerable interest
- GUIRR working group currently identifying key industry groups in the food supply chain; also researching Sematech as a model for successful industry collaboration created for the greater national good

Rapid Action

Diminishing Natural Resources

- GUIRR holds highly successful member meeting on the topic on October 20-21, 2009
- Guest presenters express universal delight in GUIRR casting national spotlight on materials
- Presenters talk off-line in advance of meeting – to be sure they maximize their time to impart critical information and eliminate duplication; presenters address issues of supply, demand, availability, cost/economics, sourcing, geopolitics, recycling, and sustainability
- DOD Under Secretary of Defense for Acquisition, Technology and Logistics (Ashton Carter) expresses interest in the topic; notifies the new director of DARPA (Regina Dugan) of GUIRR's planned coverage of the topic. DARPA asked to be kept apprised of the meeting and any follow-up material
- A set of recent, topical news stories, articles and relevant National Academy reports is compiled for dissemination to GUIRR members and meeting participants

Outcomes

Diminishing Natural Resources

- A written/printed Meeting Recap of the October 2009 GUIRR members meeting has been broadly disseminated as well as posted online
- Soon after the GUIRR meeting, William Sanders III, Director, National Center for Environmental Research, EPA, notified GUIRR of plans to develop a new RFA for assistance in developing a Center for Sustainable Rare Earth Mineral Extraction Technology; EPA expects to go to OMB for funding later this month (February 2010)
- Staff members of the Subcommittee on Investigations and Oversight of the House Committee on Science and Technology are utilizing GUIRR meeting materials as background and have invited GUIRR meeting presenters to participate as witnesses in a congressional hearing on the general rare earths supply situation, with a focus on what R&D might contribute to improving it in various ways (hearing scheduled for February 10, 2010, weather permitting)
- Congress shows concern about access to domestic minerals, with an earmark to protect rare earth element mines and bills to promote access to molybdenum-99 isotopes (H.R. 3326, H.R. 3276, H.R. 2647)
- Reference to the timely GUIRR meeting was made during a subsequent meeting entitled “Minerals for a Green Society” held February 4, 2010 by the Mining and Metallurgical Society of America (MMSA)
- The GUIRR meeting generated renewed interest in a 2008 NRC report entitled “Managing Materials for a Twenty-first Century Military” and helped jump-start plans for a newly envisioned NRC workshop on “Materials Availability for Manufacturing – Supply Chain Resiliency” proposed by the National Materials Advisory Board
- The National Academies Science and Technology for Sustainability Program has drawn up plans to host a workshop later this year in collaboration with GUIRR on the topic: “Implications for Sustainability: A Focus on Materials”
- GUIRR meeting presenters have been invited to write for several publications, including *Issues in Science and Technology*, *Mechanical Engineering* (ASME), and *NCURA Magazine*

GUIRR Mechanics

- **Members enter GUIRR by three routes:**
 - Appointment by the National Academy of Sciences president (for university president or company CEO)
 - Federal agency head (*ex officio*)
 - Dues-paying industry-university partnership program (VP level and similar)
- **A group of members may suggest and champion a project**

For More Information

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