2017 ANNUAL REPORT

Government-University-Industry Research Roundtable

MISSION

The Government-University-Industry Research Roundtable (GUIRR) was created in 1984 in response to the report of the National Commission on Research which called for an institutionalized forum to enhance communication among the top leaders of government and non-government research organizations. Its mission 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 questions stemming from current debate and analysis; and to incubate activities of on-going value to the stakeholders. This forum facilitates candid dialogue among participants to foster self-implementing activities, and, where appropriate, to carry awareness of consequences to the wider public. [http://www.nas.edu/guirr]

LEADERSHIP

Two co-chairs oversee the work of GUIRR – one from academia and one from industry. The term of office is three years, with an optional second consecutive term. Additionally, a small Executive Committee convenes three times yearly for a face-to-face meeting. Its role is to provide overall guidance, advice, and direction to GUIRR and the staff. The current composition of the Executive Committee includes: Laurie Leshin, President, Worcester Polytechnic Institute (university co-chair); Gordon England, Chair, PFP Cybersecurity (industry co-chair); C. D. (Dan) Mote, Jr., President, National Academy of Engineering; France Córdova, Director, National Science Foundation; Christopher Austin, Director, National Center for Advancing Translational Sciences, NIH; Stephen Cross, Executive Vice President for Research, Georgia Institute of Technology; Keoki Jackson, Lockheed Martin (new to the Committee as of 8/2017); and Susan Sauer Sloan, Director, GUIRR.

In 2017, members of the GUIRR Council asked to assume a more active role. The Council, composed largely of senior government officials plus a few corporate and university executives, met once in 2017 (in October, joined by members of the Executive Committee) to ideate around potential S&T challenges going forward, looking at a 1-3 year time horizon, and to points where GUIRR might help in framing upcoming critical questions. It was recommended that the Council also convene thrice yearly going forward—for strategic discussion just prior to the topical, full member meetings.

MEETINGS

GUIRR convenes three general meetings per year that provide opportunity for the entire membership to assemble for the purpose of discussion and debate on critical issues that may prevent or impede the U.S. research enterprise from reaching its full potential. The issues are relevant to GUIRR's three constituent sectors—government, universities, and industry—and can benefit by a coordinated pursuit of solutions. It is our firm belief that by working together, mindfully and with a cultivated sense of cultural understanding and trust, we can affect real change in both policy and practice.

GUIRR considered an array of issues of national and global importance at its meetings. The topics were selected by the membership *writ large* and impact the research enterprise, have broad policy implications, and will benefit from enhanced and sustained cross-sector (G-U-I) engagement.

The first meeting of 2017 was held in late February and focused on **Examining the Mistrust of Science**. Historically public opinion has upheld science as a worthy mechanism for identifying truth, and has consequently relied on the scientific community to inform policymakers and the public on issues of national scientific importance for at least the last half-century. Uncertainty of science's objectivity, however, could threaten to destabilize the cultural authority of science and its position within public policy. With this meeting we considered the trends in public opinion of science and examined potential sources of mistrust both internal and external to the science community. We also explored the ways in which cross-sector collaboration between government, universities, and industry may improve public trust in science and scientific institutions in the future. As meetings go, this one proved to be one of our most timely and popular with over 130 attendees!

The second meeting of the year was held in June and titled: **Beyond Patents: Assessing the Value and Impact of Research Investments**. This comment sparked the discussion: *Companies know exactly what they spend on research, but knowing exactly what they get for their money is a persistent problem.* Without a good way to measure value, research – especially innovative fundamental research – can be viewed as a cost that can be cut to boost near-term earnings, supposedly without long-term consequences. The number of patents is one metric for measuring value, but that information is not necessarily useful without knowing the business value of those patents in the marketplace. This meeting looked to identify other metrics that serve to highlight the value of research and innovation. We first considered the (real, perceived) value of patents as a proxy for innovation, then explored where patents fall short as a metric for assessing research impacts, and concluded with a discussion and showcase of other metrics that may better serve the need to assess research value and impact.

The third and final meeting of the 2017, in October, explored **The Role of State Governments in Economic Development and R&D Competitiveness**. Increasingly individual states are actively setting policy agendas that directly influence R&D. This meeting considered how states implement policies to support innovation under budget constraints; how regional cluster development that includes government, university, and industry actors can drive innovation and economic growth; and how a coordinated effort between state governments can contribute to the federal R&D agenda and national innovation competitiveness. We heard from a former Governor about the challenge of thinking beyond election cycles, compared state approaches, discussed federal policies intended to stimulate innovation at the state level, and received updates on two of the nation's advanced manufacturing institutes.

All GUIRR meetings are held in Washington, DC to accommodate our federal participants. A written summary (Proceedings of a Workshop-in Brief) is prepared following each meeting, reviewed both externally and internally, disseminated to member organizations, and posted on the GUIRR website. The agenda with links to guest presentations (shared with permission), related readings, and the attendance lists also post online after each meeting (see Past Meetings under EVENTS).

RECENT MEETINGS, WORKSHOPS, AND SPECIAL EVENTS

A number of special events were held in 2017 too. A free public workshop was convened in February entitled **Thriving in the Innovation Economy through Collaborations between Governments,**

Universities, and Industry that introduced the concept of Innovation Network Mapping and how the tool/technique can be used to build regional collective intelligence to drive innovation and economic growth. In March, GUIRR hosted a multitude of stakeholders for a discussion on the challenges of **scientific integrity** that led to a set of principles issued by the International Life Sciences Institute (ILSI), North America. And in June we hosted a half-day workshop showcasing strategies to more reliably produce **Highly Integrative Basic and Responsive (HIBAR) research** – fundamental research carefully linked to real-world problem contexts – that may produce stronger theories and more societally valuable results.

Additionally, an active working group worked throughout the year to craft an agenda for a 2.5 day workshop on **Ethics, Data, and International Research Collaborations in a Changing World**. The workshop is set to take place in March of 2018.

PROJECTS

Webinar Series – The webinar series is, at this point, a rather longstanding activity. Since August, 2012, GUIRR has hosted a near-monthly webinar on topics of interest with crossover appeal to the GUIRR membership. The webinars are offered free-of-charge, though advance online registration is required. Participation rate is 60 percent (of all registrants), a strong number for a free offering. Average attendance is 75 people per webinar for the past year. The webinars are recorded and openly available through the GUIRR website. GUIRR Associate Program Officer Megan Nicholson manages and moderates the popular series.

Webinars hosted in 2017 include:

- **January 24, 2017** – *Making and Makerspaces in Education: Resources for Innovative Learning*
- **February 15, 2017 –** *Rebuilding Our Innovation Infrastructure for the 21st Century*
- **March 29, 2017 –** *Women, Minorities, and Persons with Disabilities in Science and Engineering*
- **April 24, 2017 –** *The NIH Microphysiological Systems Program: Tissues-on-chips for Drug Safety and Efficacy Studies*
- **May 22, 2017 –** *Highly Integrative Basic and Responsive Research (HIBAR): Partnerships for Discovery & Innovation* ("tickler" for a subsequent half-day workshop of the same title)
- **June 15, 2017 –** *Addressing Global Challenges through Partnership: The Mars, Inc. and UC Davis Relationship* (1st in a mini-series featuring GUIRR university-industry partners)
- **July 20, 2017** – *Gender in the Global Research Landscape* (2nd in the mini-series; Elsevier and Purdue University)
- **September 28, 2017** – *OnPAR: A New Funding Paradigm*
- **October 24, 2017 –** *Assessing the Advanced Research Projects Agency-Energy*
- **November 30, 2017** – *NCI's Cancer Moonshot*

International Research Collaborations – This working group ("I-Group") was established in 2008 after the GUIRR meeting on **"**New Partnerships on a Global Platform." Its focus is on the growing complexity of international relationships and research collaborations. Following two previously organized/hosted workshops and published summary reports (*Examining Core Elements of International Research*

Collaboration, 2010-2011 and *Culture Matters: International Research Collaborations in a Changing World*, 2013-2014), the group began exploring, in 2016, the prospect of a dedicated workshop on the ethics of data usage in international research collaborations. I-Group members have convened bimonthly by teleconference since last winter, and met face-to-face in DC on March 30, 2017 to scope out plans for an international workshop. Worried about international travel and potential visa application processing complications, the group decided that it was best to postpone the timing of the workshop from fall 2017, as initially planned, to the spring of 2018. One expected output of the March 14-16, 2018 workshop is a published workshop summary report.

Mapping Innovation Ecosystems Pilot – In February 2017, GUIRR held a workshop to discuss Innovation Network Mapping and how to build regional collective intelligence to drive innovation and economic growth. Leading the workshop was Gary Markovits, cofounder and CEO of Innovation Business Partners, Inc. (IBP), who spoke about "Thriving in the Innovation Economy through Collaborations of Government, Universities, and Industry." IBP prepared a white paper for the workshop, which may be viewed on the GUIRR website along with a video recording of the full workshop.

Following the workshop, IBP offered a free pilot of Innovation Network Based Economic Development for interested participants. Four academic institutions stepped forward, each interested in identifying potential industry partners in the pursuit of energy related innovations and economic development. Discussion gave rise to the TrUE Alliance Innovation Genotype™ and Regional Collaborators pilot. Members of the Tri-State University Energy Alliance communicated regularly by phone and electronic means and, in June 2017, IBP issued its report.

Federal Demonstration Partnership (FDP)

One of GUIRR's earliest accomplishments was the launching of the Florida Demonstration Project in 1986. This effort ultimately became the 400+ person Federal Demonstration Partnership (FDP) of today. The FDP was launched initially to address the very serious problems generated by then-extant federal regulations regarding sponsored research activities at universities – for example, the inability to carry forth one year's funding to the next, generating artificial end-of-year spendouts and stranding students mid-degree.

The purpose of the FDP is of continued importance today: to reduce the administrative burdens associated with research grants and contracts. It does so through cooperative demonstrations, or experiments, or new approaches that involve some subset of the 154 institutional and 10 federal member organizations that constitute the Phase VI members of the FDP.

Much of the FDP's work has resulted in tangible changes to federal agency systems. Its members meet three times yearly in Washington, DC – in January, May, and September. GUIRR has remained the neutral convener of the FDP for 30 years, providing management support for FDP through an agreement with a consortium of federal agencies, but the Partnership runs otherwise with relative autonomy. The FACA exemption under which GUIRR operates allows the FDP to convene federal agency and university

representatives in the same room to address common problems. This exemption is obviously critical to the functioning of FDP.

The FDP operates in six-year "phases." FDP Phase IV began October 1, 2002 with over 90 educational institutions/consortia, 10 federal agencies, and four affiliate members, and made notable strides in improving how federal agencies and the research community work together to ensure the efficiency and the integrity of the research enterprise. Phase V officially began on October 1, 2008, with membership at 119 research organizations and 10 federal agencies. Of these, 14 are emerging research organizations (ERIs). In September 2014 the FDP transitioned to Phase VI, expanding to include 154 research institutions (of which 26 are ERIs) and 10 federal agencies. Eight professional associations are also affiliated with the FDP as members. Phase VI will conclude in 2020, with transition discussions already underway.

More information on the work FDP and its impact on the research infrastructure in the U.S. can be found at http://www.thefdp.org. David Wright is FDP's Executive Director.

STAFF AND CONSULTANTS*
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GUIRR MEMBERSHIP 2017

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Dr. Curtis Carlson, Founder and CEO, The Practice of Innovation
Dr. Stephen Cross, Executive Vice President for Research, Georgia Institute of Technology (nomination pending)
Dr. Mikael Dolsten, President, Worldwide Research and Development, Pfizer
Mr. Alfred Grasso, Immediate Past President and CEO, MITRE Corporation (nomination pending)
Dr. Henry "Hank" C. Foley, Interim Chancellor, University of Missouri
Dr. Dana "Keoki" Jackson, CTO, Lockheed Martin Corporation (nomination pending)
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Dr. Anne L. Plant, Chief of the Biosystems and Biomaterials Division, National Institute of Standards and Technology
Dr. Richard Seligman (FDP Chair), Associate Vice President for Research Administration, California Institute of Technology
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