

**U.S. HOUSE OF REPRESENTATIVES
COMMITTEE ON SCIENCE AND TECHNOLOGY
SUBCOMMITTEE ON RESEARCH AND SCIENCE EDUCATION**

HEARING CHARTER

*The Role of Non-Governmental Organizations and Universities in International
Science and Technology Cooperation*

**Tuesday, July 15 2008
10:00 a.m. – 12:00 p.m.
2318 Rayburn House Office Building**

1. Purpose

The purpose of the hearing is to examine the role of U.S. non-governmental organizations and universities in international science and technology cooperation, in particular relative to the role of the Federal government.

2. Witnesses:

- **Dr. Alan Leshner**, Chief Executive Officer, American Association for the Advancement of Science (AAAS), and Executive Publisher of the journal *Science*.
- **Dr. Michael Clegg**, in his capacity as Foreign Secretary, National Academy of Sciences. Dr. Clegg is also Donald Bren Professor of Biological Sciences and of Ecology and Evolutionary Biology at the University of California, Irvine.
- **Dr. William Wulf**, in his capacity as a Member of the Board of Directors, Civilian Research and Development Foundation (CRDF). Dr. Wulf is also AT&T Professor of Computer Science at the University of Virginia and immediate Past President of the National Academy of Engineering.
- **Dr. James Calvin**, Interim Vice President for Research, Texas A&M University. Dr. Calvin is also a Professor of Statistics at Texas A&M.

3. Overarching Questions:

- What are the roles of non-governmental organizations (NGO's) and universities in fostering international science cooperation relative to that of the Federal government and to each other? What unique strengths does each of the organizations represented at the hearing bring to this effort? What are their respective limitations? How do NGO's and universities coordinate their efforts with the Federal government and with each other?

- How might the Federal government take better advantage of science and the U.S. scientific community in pursuing its foreign policy goals and in helping to lead the world toward global solutions for global challenges such as water, climate, energy and infectious diseases?

4. Overview

On April 2, 2008, the Subcommittee on Research and Science Education held a hearing to examine the Federal role in international science and technology (S&T) cooperation¹. Witnesses were invited from the Office of Science and Technology Policy (OSTP), the National Science Foundation (NSF), the Department of State (DOS), and the National Aeronautics and Space Administration (NASA). The research agencies, such as NSF and NASA, support science for the sake of science; that is, they support cooperative research activities that enable U.S. scientists to work with the best scientists and access the best research sites around the world, or that leverage foreign funds to build world class research facilities. However, witnesses agreed that while DOS is responsible for establishing U.S. diplomatic priorities, the research agencies support cooperative S&T activities that may also benefit U.S. diplomatic objectives. Furthermore, OSTP and the research agencies provide intellectual support to DOS on S&T-related issues, and DOS helps the research agencies negotiate formal international S&T agreements. The purpose of the April 2 hearing was to learn about the breadth of U.S. Government sponsored cooperative S&T activities and to examine the extent to which these activities are coordinated or prioritized across the government.

The purpose of this hearing is to examine the role of non-governmental organizations in international S&T cooperation, and the relationship between those organizations and the Federal government. NGO's and universities play critical roles in promoting and managing U.S. participation in international S&T cooperation. Scientific organizations such as the National Academies and the American Association for the Advancement of Science (AAAS) can mobilize U.S. scientific leadership in a way that the U.S. Government generally can not, and they can engage in troubled countries where the government has strained or no official diplomatic relations. The U.S. Civilian Research and Development Foundation (CRDF) also has more flexibility and credibility than official government representatives in certain regions. Organizations such as the Institute for International Education (IIE) and NAFSA: Association of International Educators promote the open exchange of students and scholars across borders. Universities not only welcome foreign students and scholars to their campuses and send their own students and scholars abroad, they are increasingly experimenting with satellite campuses in regions such as the Middle East and in educating a more globally aware student body. Finally, a number of private foundations fund certain science or technology based initiatives, typically in agriculture and/or health, including Gates, Sloan, Carnegie, and Rockefeller. One much smaller foundation, the Lounsbery Foundation, provides seed funding to help jumpstart international cooperative S&T activities not related to agriculture, health or other areas not supported by the big foundations.

¹ http://science.house.gov/publications/hearings_markup_details.aspx?NewsID=2134

5. NGO Activities in International S&T Cooperation

The National Academies (comprised of the National Academy of Sciences, the National Academy of Engineering and the Institute of Medicine) have a long history of engagement in global S&T issues, run primarily out of the Policy and Global Affairs Division. The National Academies are represented at the 18-Member InterAcademy Council and the 98-Member InterAcademy Panel, both of which are global networks of national and/or regional science academies that take on global S&T challenges. The Council produces reports for policy makers on global issues, most recently on a sustainable energy future, whereas the Panel is focused more on capacity building. The National Academies also work on a bilateral basis – for example with China on biosecurity and with Israel and the Palestinian Authority on water issues. They frequently sponsor meetings and workshops to bring together scientists and engineers from different countries but with common interests and challenges. In general, the National Academies have unparalleled credibility and a unique ability to regularly mobilize a global network of scientists and our own scientific leadership in cooperative efforts to address global concerns across the spectrum of S&T issues.

The American Association for the Advancement of Science (AAAS), publisher of *Science* magazine, also has global credibility and name recognition, but does not have the same built-in network of comparable organizations. The AAAS International Office, which has just a handful of staff, supports three strategic goals: international scientific cooperation; capacity-building and workforce enhancements (including increased participation of women in science); and sustainable development. The AAAS Center for Science, Technology and Security also works on a global level to address non-proliferation and arms control. AAAS does not produce reports directly for policy makers, but it does produce reports for the community that are often of interest to policy makers. AAAS also facilitates meetings of scientists from around the world, sometimes in partnership with the National Academies. The theme of the 2008 AAAS Annual Meeting was “Science and Technology from a Global Perspective” and among the keynote speakers were the President of the Republic of Rwanda and the Science Adviser to the Secretary of State. As an organization they are making a concerted effort to engage more U.S. scientists in international cooperation.

The U.S. Civilian Research and Development Foundation (CRDF) was authorized by Congress in 1992 (P.L. 102-511) and established by NSF in 1995. CRDF receives support from several foundations and from the U.S. Government - primarily an annual grant from DOS, but also lesser amounts for specific programs from NSF, NIH, and DOD. While CRDF has many different kinds of programs in cooperative science research, education and training, including an industry partnership program, it is perhaps best known for its role in helping to redirect weapons scientists in the Former Soviet Union (FSU). CRDF, as an NGO without the constraints of official government-to-government diplomacy and bureaucracy, became very adept at enlisting FSU weapons scientists in cooperative civilian research with U.S. scientists, and bypassing bureaucracy and corruption on the FSU side to transfer to the scientists the funds necessary to partner in this research. In 2004, CRDF began to expand its reach beyond the FSU to developing

countries and troubled regions throughout the world as well as to broaden its expertise to the full range of global S&T challenges.

The international programs and initiatives at Texas A&M University are fairly representative of such programs at research universities across the country. Texas A&M has formal research agreements with more than 130 institutions in 45 countries and enrolls over 4,000 international students from 124 countries. Nationwide, 40.5 percent of the 583,000 foreign students studying in the U.S. in 2006-07 were enrolled in science and engineering programs.² The university also welcomes international faculty and scholars for limited term research and education appointments and likewise sends some of its own faculty to foreign universities. The Research and Science Education Subcommittee explored the benefits of the open exchange of science and engineering students and scholars in a February 2008 hearing.³ In addition, Texas A&M maintains two overseas centers in Italy and in Mexico City and is currently establishing a third one in Costa Rica. Faculty and students have participated in more than 600 research and development projects in over 80 countries. In 2003 the university opened a branch campus in Doha, Qatar, offering four undergraduate engineering degrees. It will soon be establishing research centers and graduate programs at the Qatar campus. The Technology and Innovation Subcommittee examined the specific issue of the internationalization of U.S. universities as part of a July 2007 hearing on the globalization of R&D.⁴

6. Questions for Witnesses

All four witnesses were asked to address in their testimony questions similar to the “overarching questions” listed previously.

² “Open Doors Report on International Educational Exchange,” Institute of International Education, 2007.

³ http://science.house.gov/publications/hearings_markup_details.aspx?NewsID=2064

⁴ http://science.house.gov/publications/hearings_markup_details.aspx?NewsID=1926