

SCIENCE & DIPLOMACY



A quarterly publication from the AAAS Center for Science Diplomacy

Robert D. Hormats, “Science Diplomacy and Twenty-First Century Statecraft,” *Science & Diplomacy*, Vol. 1, No. 1 (March 2012). <http://www.sciencediplomacy.org/perspective/2012/science-diplomacy-and-twenty-first-century-statecraft>.

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Science Diplomacy and Twenty-First Century Statecraft

Robert D. Hormats

SCIENCE diplomacy is a central component of America’s twenty-first century statecraft agenda. The United States must increasingly recognize the vital role science and technology can play in addressing major challenges, such as making our economy more competitive, tackling global health issues, and dealing with climate change. American leadership in global technological advances and scientific research, and the dynamism of our companies and universities in these areas, is a major source of our economic, foreign policy, and national security strength. Additionally, it is a hallmark of the success of the American system. While some seek to delegitimize scientific ideas, we believe the United States should celebrate science and see it—as was the case since the time of Benjamin Franklin—as an opportunity to advance the prosperity, health, and overall well-being of Americans and the global community.

Innovation policy is part of our science diplomacy engagement. More than ever before, modern economies are rooted in science and technology. It is estimated that America’s knowledge-based industries represent 40 percent of our economic growth and 60 percent of our exports. Sustaining a vibrant knowledge-based economy, as well as a strong commitment to educational excellence and advanced research, provides an opportunity for our citizens to prosper and enjoy upward mobility. America attracts people from all over the world—scientists, engineers,

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inventors, and entrepreneurs—who want the opportunity to participate in, and contribute to, our innovation economy.

At the same time, our bilateral and multilateral dialogues support science, technology, and innovation abroad by promoting improved education; research and development funding; good governance and transparent regulatory policies; markets that are open and competitive; and policies that allow researchers and companies to succeed, and, if they fail, to have the opportunity to try again. We advocate for governments to embrace and enforce an intellectual property system that allows innovators to reap the benefits of their ideas and also rewards their risk taking. Abraham Lincoln himself held a patent on an invention, a device for preventing ships from being grounded on shoals. He said in his “Second Lecture on Discoveries and Inventions” in 1859 that patents “added the fuel of interest to the fire of genius, in the discovery and production of new and useful things.”

The practice of science is increasingly expanding from individuals to groups, from single disciplines to interdisciplinary, and from a national to an international scope. The Organisation for Economic Co-operation and Development reported that from 1985 to 2007, the number of scientific articles published by a single author decreased by 45 percent. During that same period, the number of scientific articles published with domestic co-authorship increased by 136 percent, and those with international co-authorship increased by 409 percent. The same trend holds for patents. Science collaboration is exciting because it takes advantage of expertise that exists around the country and around the globe. American researchers, innovators, and institutions, as well as their foreign counterparts, benefit through these international collaborations. Governments that restrict the flow of scientific expertise and data will find themselves isolated, cut off from the global networks that drive scientific and economic innovation.

While the scientific partnerships that the United States builds with other nations, and international ties among universities and research labs, are a means to address shared challenges, they also contribute to broadening and strengthening our diplomatic relationships. Scientific partnerships are based on disciplines and values that transcend politics, languages, borders, and cultures. Processes that define the scientific community—such as merit review, critical thinking, diversity of thought, and transparency—are fundamental values from which the global community can reap benefits.

History provides many examples of how scientific cooperation can bolster diplomatic ties and cultural exchange. American scientists collaborated with Russian and Chinese counterparts for decades, even as other aspects of our relationship proved more challenging. Similarly, the science and technology behind the agricultural “Green Revolution” of the 1960s and ‘70s was the product of American, Mexican, and Indian researchers working toward a common goal. Today, the United States has formal science and technology agreements with over fifty countries. We are committed to finding new ways to work with other countries

in science and technology, to conduct mutually beneficial joint research activities, and to advance the interests of the U.S. science and technology community.

Twenty-first century statecraft also requires that we build greater people-to-people relationships. Science and technology cooperation makes that possible. For example, through the Science Envoy program, announced by President Obama in 2009 in Cairo, Egypt, eminent U.S. scientists have met with counterparts throughout Asia, Africa, and the Middle East to build relationships and identify opportunities for sustained cooperation. With over half of the world's population under the age of thirty, we are developing new ways to inspire the next generation of science and technology leaders. Over the past five years, the Department of State's International Fulbright Science & Technology Award has brought more than two hundred exceptional students from seventy-three different countries to the United States to pursue graduate studies. Through the Global Innovation through Science and Technology Initiative, the United States recently invited young innovators from North Africa, the Middle East, and Asia to post YouTube videos describing solutions to problems they face at home. The top submissions will receive financial support, business mentorship, and networking opportunities.

Advancing the rights of women and girls is a central focus of U.S. foreign policy and science diplomacy. As we work to empower women and girls worldwide, we must ensure that they have access to science education and are able to participate and contribute fully during every stage of their lives. Recently, we partnered with Google, Intel, Microsoft, and many other high-tech businesses to launch TechWomen, a program that brings promising women leaders from the Middle East to Silicon Valley to meet industry thought-leaders, share knowledge and experiences, and bolster cultural understanding.

Science diplomacy is not new. It is, however, broader, deeper, and more visible than ever before and its importance will continue to grow. The Department of State's first *Quadrennial Diplomacy and Development Review* highlights that "science, engineering, technology, and innovation are the engines of modern society and a dominant force in globalization and international economic development." These interrelated issues are priorities for the United States and, increasingly, the world.

The Department of State is committed to utilizing our capabilities in Washington, DC, and throughout the world to connect with scientists, entrepreneurs, and innovators for the mutual benefit of all of our people. In addition to Environment, Science and Technology, and Health Officers stationed at U.S. embassies, almost fifty doctoral-level scientists and engineers work at the Department of State through the AAAS Diplomacy Fellows program and the Jefferson Science Fellows program. Through this cadre of science and foreign policy experts, the Department of State will continue to advance policies that bolster the global repertoire of scientific knowledge and further enable technological innovation. **SD**