

# A tale of two states

**O**n 20 July 2015, the United States reopened its embassy in Havana, Cuba, after more than 50 years, creating a spirit of engagement between the two Cold War adversaries. This is a welcome addition to the 285 U.S. embassies and consulates in 190 other countries and should encourage Cuban and American scientists to practice “science diplomacy.” Sadly, however, U.S. diplomacy has rarely paid enough attention to science. Given that science and technology (S&T) capabilities affect diplomatic agendas on a global scale, the powerful S&T base of the United States must be better linked to its foreign policy goals.

The 2015 U.S. National Research Council (NRC) report *Diplomacy for the 21st Century* makes a convincing case to “embed a culture of science and technology throughout the U.S. Department of State.” The report underscores many obstacles to achieving an S&T culture. One glaring problem is the thin S&T workforce at the State Department. Although it employs a small core of S&T professionals in Washington, DC (at the Bureau of Oceans and International Environmental and Scientific Affairs and in the Office of the Science and Technology Adviser), there are too few scientists among the rest of the diplomatic staff, and those few are overburdened. Of the roughly 14,000 Foreign Service Officers worldwide, only about 100 are full-time Science Counselors posted abroad. This increase from a mere 57 in 1999 is hardly sufficient. The NRC committee wisely characterized the situation as a “tale of two States”: S&T is alive in Washington, but starving in U.S. foreign missions.

Why should this be a concern to the United States as well as to other countries? Consider health. Long before the Ebola virus hit the front pages, Nobel Laureate Joshua Lederberg said, “The microbe that felled one child in a distant continent yesterday can reach yours today and seed a global pandemic tomorrow.” America’s S&T strengths span academic research supported by the National Institutes of Health and the National

Science Foundation, the pharmaceutical industry, the Centers for Disease Control and Prevention, many universities, and a powerful global network of health care workers and nonprofit organizations. But these assets can only be orchestrated to address global health crises if diplomats understand these resources fully and help to deploy them appropriately.

The broader case for building competency in science

diplomacy rests on a fundamental principle: Diplomats and the S&T community are partners. Scientists and engineers aid diplomats in negotiating international agreements, as in the recent negotiations with Iran over limits to its nuclear program, in which the U.S. Secretary of Energy, physicist Ernest Moniz, has had a central role. Diplomats, in turn, assist scientists in implementing S&T projects, from “big science” endeavors such as the International Space Station to smaller-scale projects, such as biological and seismological surveys. And when nations are in conflict, cooperation among S&T specialists from those nations often opens channels to improve understanding.

Enhancing science diplomacy requires closing the gap between the S&T and foreign policy communities. The NRC report suggests creating a new Science and Technology Advisory Board in the State Department to advise the Secretary and increasing the number of S&T Policy Fellows supported by the American Association for the Advancement of Science (AAAS, the publisher of *Science*) who work in the State Department. Courses in science diplomacy, such as those offered at The Rockefeller University and sponsored by AAAS and The World Academy of Sciences, serve as good models to educate scientists and engineers about foreign affairs and increase the S&T literacy of diplomats.

Diplomacy is like a 10-speed bicycle—most gears never get used. The scientific and diplomatic communities should shift science diplomacy into a higher gear so that nations can confront the many daunting challenges ahead.

—Mandë Holford and Rodney Nichols



**“Diplomacy is like a 10-speed bicycle—most gears never get used.”**



*Mandë Holford is an associate professor in the Department of Chemistry and Biochemistry at Hunter College and a research associate at the American Museum of Natural History, New York, NY. E-mail: mholford@hunter.cuny.edu*



*Rodney Nichols is vice chair of the board at CRDF Global, Arlington, VA, and executive vice president emeritus at The Rockefeller University, New York, NY. E-mail: Rodney.nichols12@gmail.com*

PHOTOS: (TOP RIGHT) DENIS FINNIN; (BOTTOM RIGHT) NEW YORK ACADEMY OF SCIENCES; (INSET) QUERBEET/ISTOCKPHOTO.COM

Downloaded from www.sciencemag.org on August 1, 2015