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Building a National Science Diplomacy System

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SCIENCE-BASED issues are becoming more important to the conduct of foreign policy, increasing the need for policy makers to develop and implement science diplomacy strategies. In fact, increased use of the term "science diplomacy" represents a sea change in how the foreign policy community is looking at expanding its focus on and use of science. Over the course of the past year, the pages of this quarterly have been filled with expert articles on different approaches to science diplomacy and specific issues that provide opportunities for practitioners in science and foreign policy to work more closely together. However, as more countries begin to experiment with science diplomacy, an often-asked question is, what steps are needed to develop and implement a science diplomacy strategy?

When answering this question, it is important to consider that science and technology-based issues, such as climate change and global health, are growing more important in the conduct and execution of a robust policy in an increasingly connected and less polarized world. At the same time, nations are competing to attract the best talent from around the world in an attempt to catalyze economic growth and innovation. The result is greater emphasis for science and science cooperation in a comprehensive foreign policy. Nations are looking to science to achieve some or all of the three Es of science diplomacy: *expressing national power or influence, equipping decision makers with information to support policy, and enhancing bilateral and multilateral relations*. While larger, scientifically advanced

countries have been active in this arena for decades, now countries large and small, developed and developing, are expressing greater interest in implementing science diplomacy.

As more countries begin to look at incorporating science into diplomacy, a few steps can be taken to ensure greater success:

Develop a Strategic Approach to Science Diplomacy

Effective use of science diplomacy requires a coherent strategy. For example, policy makers should consider the question of focus for efforts. Ultimately, any science diplomacy effort will need to be couched in national priorities—namely, which of the three Es is the most important. While policy makers can and should make such a determination, they would benefit from external thinking about such approaches by national organizations outside of government, such as think tanks, associations, and academies of science. Therefore, encouraging such civil society development and focus on science diplomacy activities is a critical first step to any such activity.

Establish Mechanisms to Increase Interaction Between Science and Foreign Policy Communities

Inside of government, increasing interaction between the science and foreign policy communities would point to the creation of inter-ministerial working groups that bring together research and foreign ministries. In many countries, the science or research ministries have the lead in international science efforts. Better linking such efforts to the foreign ministries can increase the potential for science to be coupled to broader foreign policy objectives. In the United States, there is no centralized ministry in charge of science. Instead, many of its international science arrangements are made through the Department of State, which has benefited from having a dedicated science advisor for almost a decade and a half. The advisor serves as a central node for engaging the scientific and research communities in support of diplomacy. This position has been central to efforts to engage the science community on issues important to the foreign policy community, including weapons of mass destruction, cybersecurity, and other topics with direct national security implications. This position, combined with an effective line office dedicated to broader science-related issues (the Bureau of Oceans and International Environmental and Science Affairs, in the case of the Department of State) increases the influence of science issues within foreign policy making. Linking the foreign policy and science communities is also an area where nations benefit from having robust nongovernmental science organizations, such as associations and academies, that have experience and mandates to bring together the different elements of society—especially science and policy makers.

Increase the Capacity of Foreign Ministries to Pursue Science Issues

One of the first ways to increase the capacity of foreign ministers to pursue science matters is to train diplomats in issues related to science. The U.S. Department of State does this through a course in its Foreign Service Institute that is especially designed for foreign service officers assigned to environmental, scientific, and health portfolios. In addition, foreign policy schools, which are training the next generation of diplomats, could incorporate some courses in science and technology into their curriculum to acquaint students with some of the important issues and concepts. A number of U.S. foreign policy schools already offer courses dedicated to specific science-based issues, such as climate change, global health, and nuclear security. Building on these, foreign policy schools could attempt to work across the university by creating links between science departments and international relations. Just as there are joint programs in law and international affairs, so too might there be a benefit in joint degree programs between science and foreign policy disciplines.

Finally, increasing the number of short-term scientists in the foreign ministry, through rotations or fellowships, holds great potential to tapping into expertise while also familiarizing the science community with important foreign policy considerations. Programs such as the American Association for the Advancement of Science (publisher of *Science & Diplomacy*) policy fellowships and the Jefferson Science Fellowships in the U.S. Department of State have increased the literacy of the foreign ministry in science and technology issues while also cross-fertilizing the foreign policy and science communities to positive effect.

The fundamentals of foreign policy continue to change. Technology revolutions and the emergence of more civil society groups in international relations make diplomacy more dynamic and decentralized. The result is that foreign policy makers benefit from adaptive tools that address core challenges at global, regional, and bilateral scales. Into this world, scientists and science (and its applications) are becoming ever more relevant to diplomacy. Individual countries can determine the best way to achieve their own strategic objectives. As national leaders begin grappling with these realities, science diplomacy will become an increasingly large part of the diplomacy tool kit, requiring new approaches. **SD**