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The Royal Society, the Foreign Secretary, and International Relations

Martyn Poliakoff

FROM its inception in 1660, the Royal Society of London has been involved with science internationally. More recently, its work has become part of a growing trend in the science community of nongovernmental organizations supporting international relations by working beyond national boundaries on problems of common interest. Such efforts are consistent with the basic tenets of science, namely, that science provides a non-ideological environment for the participation and free exchange of ideas between people, regardless of cultural, national, or religious backgrounds.¹ As Sir Paul Nurse, president of the Royal Society, argues, this is because of the way science is done. "It is based on reproducible observation and experiment, taking account of the evidence and using it to settle scientific issues with rational, consistent and objective argument. Central to science is the ability to prove something is not true. This distinguishes it from beliefs based on religions or ideologies, which are underpinned by faith, tradition or opinion."²

The Royal Society is one of the oldest academies of science in the world. Even under its first secretary, Henry Oldenburg, correspondence with scientists overseas was an important activity. The society appointed its first foreign secretary in 1723. I have served in this post for the past three years, and here I outline how the role

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has changed and why a national science academy can and should take a lead in science diplomacy.

The Royal Society covers all areas of natural science and mathematics and is one of four national academies in the United Kingdom. The others are the British Academy (arts, social sciences and humanities), the Royal Academy of Engineering, and the Academy of Medical Science. The Royal Society is a self-governing body that, like many national academies, receives a substantial proportion of its funding from the government but remains independent of it. The society currently has about 1,350 fellows working not only in the United Kingdom but also in the Commonwealth and in many other countries across the world. Additionally, about 150 foreign members are drawn from eminent scientists working outside the Commonwealth.

The foreign secretary is responsible for advising the society's president on international relations and, in practice, often represents the president at events and meetings outside the United Kingdom. In the seventeenth and eighteenth centuries, overseas travel was difficult and time consuming, so the principal role of the foreign secretary was to correspond with scientists in other countries.

Even then, there were serious diplomatic issues to deal with. For example, Benjamin Franklin, one of the Founding Fathers of the United States, was a fellow of the Royal Society. In 1779, despite being preoccupied with his main responsibility of procuring French aid for America in the war against Britain, he arranged for Captain James Cook, the British explorer and pioneer who was also a fellow, to be given safe passage on returning from his third voyage to the Pacific.

One notable foreign secretary was Thomas Young, the polymath who studied the interference of light, invented the eponymous modulus for the extension of springs, and was one of the first to decipher Egyptian hieroglyphics. Some foreign secretaries took an active role in the nation's affairs. For example, Sir Henry Tizard, foreign secretary during the Second World War and chairman of the government's high-level Committee for the Scientific Survey of Air Defence, led a mission to the United States to exchange scientific know-how in areas such as radar for the benefit of the war effort.

During the Cold War, the society played a major role in maintaining lines of communication with the Soviet Union when more conventional diplomatic channels were largely frozen, particularly in the area of nuclear physics. The society went on to play a crucial role in restoring scientific relations between the United Kingdom and China in the wake of the Cultural Revolution (1966–76),³ led a UK scientific delegation to South Africa soon after the fall of apartheid, and sent its own delegation to Argentina three years after the Falklands War in 1982, before the UK government restored diplomatic relations in 1990.

Now, in the twenty-first century, the Internet and the explosive spread of electronic communication means that people are interconnected as never before. News of distant events that would have taken months to transmit in the eighteenth century is now on television and computer screens in the United Kingdom within a

few minutes of their happening. At the same time, long-distance travel has become cheaper and more rapid. Scientists can now afford to zigzag across the globe in pursuit of their science.

This ease of communication has also catalyzed far more widespread scientific collaboration across the world. These developments are very positive for science both nationally and internationally. They have been accompanied by the founding of a plethora of international organizations and networks, all trying to promote closer working relationships between scientists and engineers in different countries and regions.

All of these changes are very timely. The world is facing supranational challenges that did not exist on a global scale in earlier centuries. Rising population, rapid urbanization with the growth of megacities, climate change, finite natural resources, and the extinction of species at an unprecedented rate have all become science-related issues that governments and nations ignore at their peril. Already, access to oil and gas reserves is dominating world politics and giving rise to confrontations between countries. So what is the role of a foreign secretary of a modern national academy in this rapidly changing political landscape? Clearly, it cannot be to singlehandedly solve all of the world's problems.

Fortunately, the foreign secretary of the Royal Society is not operating alone. The foreign secretaries of leading academies meet frequently through global and regional networks such as IAP, the global network of science academies, and the European Academies Science Advisory Council. These meetings permit individual academies to act collectively on important issues and to coordinate their own activities so that their individual efforts complement each other, for example, in capacity building in less developed parts of the world such as Africa.

The Royal Society has been engaging with scientists in Africa for many years. The continent is undergoing rapid change—some of its countries are experiencing unprecedented rates of economic growth, along the lines of 20 percent per year. Population is increasing rapidly. Several countries, including Ethiopia, are expanding their education systems to train the scientists and engineers who will be needed to shape the countries' futures.

With philanthropic funding from Pfizer, the Royal Society's response has been to help Ethiopia, as well as Tanzania and Ghana (where the society already had historical links) to develop their academies of science, giving advice on solving whatever problems the academies feel are the most pressing. In 2007, when Lorna Casselton first visited the academy in Tanzania in her role as the Royal Society's foreign secretary, her opening remark was "How can I help you?" The result of the society's work has been greater engagement between the three academies and their respective governments. The foundations have been laid for the academies to start providing sound scientific evidence that can help policy makers in making decisions.

The society's work has complemented similar African programs by the French, German, and U.S. academies. In addition, the society has endeavored to widen the impact of its work by hosting events to which all African academies have been invited, as well as organizing the first Commonwealth Science Conference in nearly half a century in India in 2014; it attracted delegates from the majority of Commonwealth countries in Africa, including Zimbabwe, where UK political relations are currently strained.

By tradition, the society's foreign secretary is always a research-active scientist. So it is a pleasure when the role involves real scientific research, as in the case of a current scientific collaboration between North Korea and the United Kingdom. This collaboration is focused on an issue of crucial importance to North Korea's region: Mount Paektu, an active volcano that straddles the border between China and North Korea. The volcano's eruption in the tenth century was one of the most powerful in recorded history, covering 33,000 square kilometers with ash, despite being well away from the boundaries between tectonic plates, where volcanic activity is usually found. Recent seismic activity has raised concerns that Mount Paektu may erupt again. So it is important that the volcanic activity should be properly understood.

According to science journalist Richard Stone, in September 2011, he and two UK volcanologists, James Hammond and Clive Oppenheimer, became the first Westerners to visit North Korea's volcano field stations,⁴ and they later deployed the first broadband seismometer in that country. This historic visit was initiated by North Korea's Pyongyang International Information Center of New Technology and Economy and facilitated by the Environmental Education Media Project for China in Beijing, with support from the American Association for the Advancement of Science (publisher of *Science & Diplomacy*).

The Royal Society became involved at this point by helping to broker an acceptable agreement with all parties involved that led to a collaborative research project. In 2013, a memorandum of understanding and a research agreement were signed by all parties. Now more equipment is in place on the Korean side of the volcano, and high-quality data are being collected and shared between the project partners. The field stations are expected to remain in operation until August 2015, and the geological analysis of the volcano is going well. Preliminary results suggest that the project will succeed in locating where the molten rock is to be found beneath the volcano, thereby allowing its behavior to be better understood.

Almost inevitably, each foreign secretary has a particular affinity with one country or a small number of countries. In my case, that country is Russia; my father emigrated from there in 1924. I have been visiting the country since 1965, and, in 2012, I was elected a foreign member of the Russian Academy of Sciences (RAS).

The Royal Society's links with the Soviet Academy of Sciences stretch back to the Cold War, and good relations continue with RAS despite the currently strained

political relations between the United Kingdom and Russia and recent threats to scientific collaboration between Russia and the West. RAS is itself undergoing unprecedented change. The society is supporting RAS during this transformation and recently hosted a visit by a senior representative of RAS.

Since the most solid links are those based on genuine scientific partnership, the Royal Society collaborated with RAS and the Academy of Sciences of the autonomous Republic of Tatarstan to organize an interdisciplinary Frontiers of Science meeting in the city of Kazan in 2013 to bring together younger researchers from the UK and Russia. Joint projects have followed, and I hope that scientific relations between the UK and Russia can grow during this period of continuing political challenges.

In all of these cases, it is the Royal Society's recognized independence from government, its championing of scientific excellence (the science is not compromised), and its individual and institutional international networks that have made it possible for the Royal Society to take the initiative. There is little doubt that these attributes will be equally important in the future. However, international relations are by their very nature unpredictable, so the society's international work necessarily has to be flexible.

What remains certain is that some element of science diplomacy will remain a priority for future foreign secretaries, wherever their personal connections lie. Capacity building in Africa and other developing regions will continue to be important for the foreseeable future, not only strengthening science academies and their interaction with governments but also helping to improve the ability of scientists in those countries to respond to emergencies such as epidemics or extreme weather. The foreign secretary will continue to advise the society's president on international relations and to mobilize scientists, wherever they live in the world, to help address whatever challenges face humanity in the future. **SD**

Endnotes

1. At a multilateral level, the Royal Society is a member of the International Human Rights Network of Academies and Scholarly Societies and has been an active supporter of scientific freedom and access. The society is also a member of the International Council for Science Committee on Freedom and Responsibility in the Conduct of Science, which advocates the universality of science so that scientists are not discriminated by virtue of citizenship, religion, political opinion, ethnic origin, race, or gender. Through this committee, the society supports the free communication between, and association with, other scientists and can help scientists overcome barriers to cooperation, sometimes in spite of political impasse.
2. "Address of the President, Sir Paul Nurse, given at the Anniversary meeting on 1 December 2014," The Royal Society Publishing website, <http://rsnr.royalsocietypublishing.org/content/early/2015/01/06/rsnr.2014.0068>. See also "Advising Society on Science" lecture to the Chinese Academy of Sciences, November 28, 2012, delivered by Rapela Zaman, a senior policy advisor at the Royal Academy, on behalf of Sir Paul Nurse.
3. Jon Agar, "It's Springtime for Science': Renewing China-UK Scientific Relations in the 1970s," The Royal Society Publishing, December 19, 2012, <http://rsnr.royalsocietypublishing.org/content/early/2012/12/14/rsnr.2012.0052>.

4. Richard Stone, "Vigil at North Korea's Mount Doom," *Science* 334, no. 6056 (November 2011): 584–88, <http://www.sciencemag.org/content/334/6056/584.short>.

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