

emerge from recession.”

Brian Foster, head of particle physics at Oxford University, says the cuts “give the lie to” the promise that science funding would be protected from the budget cuts the UK had to make because of the recession.

Backlash

Jocelyn Bell Burnell, president of the UK Institute of Physics, says, “The greatest shame about the [STFC budget] is the reduced investment in people. With all of the challenges we face, from climate change and energy security to a rapidly aging population, we urgently need individuals well trained in physics. The amount needed to avoid this unfortunate cut is minor in comparison to the huge sums of money spent saving the financial sector. Surely, money can be found to avoid it.”

All of the UK’s nuclear physicists signed a letter to science minister Paul Drayson alerting him to the implica-

tions of the cuts for the government’s push to build 10 new nuclear power plants. “These out-of-proportion cuts have the potential to kill off the UK skills base in nuclear physics,” says Patrick Regan at the University of Surrey. “It’s incredible. Where does the STFC think the trained manpower that the UK will need is going to come from?”

The outcry has not gone unnoticed by the government. In a 16 December statement, Drayson said, “It has become clear to me that there are real tensions in having international science projects, large scientific facilities, and UK grant-giving roles within a single research council. It leads to grants being squeezed by increases in costs of the large international projects, which are not solely within their control. I will work urgently with Professor Sterling, the STFC, and the wider research community to find a better solution by the end of February 2010.”

Paul Guinnessy

US scientists step up their efforts at diplomacy

With recent visits to North Korea and Cuba, US scientists are seeking interactions with their peers to open channels of communication.

In early December, as President Obama’s special envoy was in Pyongyang trying to revive negotiations to end North Korea’s nuclear weapons program, six US scientists were in town on a different mission: establishing contacts with their North Korean counterparts. In an effort in the mold of US-Soviet cold war science diplomacy, the US delegation, led by Nobel laureate biochemist Peter Agre, broke new ground as the first attempt at scientific outreach to the politically isolated nation.

The five-day visit by scientists to the Democratic People’s Republic of Korea (DPRK) was the culmination of a four-year-old cooperative effort by the American Association for the Advancement of Science (AAAS), the US Civilian Research and Development Foundation (CRDF), the Korea Society, and Syracuse University, which is engaged with Pyongyang’s Kim Chaek University of Technology in the sole ongoing academic science collaboration between the two nations. Members of the delegation say there was no connection with US special envoy Stephen Bosworth’s visit, and the timing was purely coincidental.

Although no specific follow-up vis-

its are planned, Agre pronounced the trip a success. “Our greatest sense of accomplishment came from the person-to-person exchanges and becoming acquainted with counterparts in the DPRK,” says Agre, director of the Johns Hopkins University’s Malaria Research Institute. “This can be the beginning of what we think can be a very wonderful relationship. But it’s just the beginning, and we have far to go.”

Agre, who steps down as AAAS president this month, had just returned from a November scientific journey to Cuba, where he and seven other US visitors met for three days with counterparts at the University of Havana and with officials from the Cuban ministries of science, health, higher education, foreign affairs, and environment. The Cuban visit also took several years to arrange, but it received an unexpected boost when Vaughan Turekian, who directs the AAAS science diplomacy program, bumped into Fidel Ángel Castro Díaz-Balart—the eldest son of Fidel Castro—during a conference in Japan. A nuclear physicist, Castro Díaz-Balart acts as scientific adviser to the Cuban government. Though out of the country during the visit, Castro Díaz-Balart

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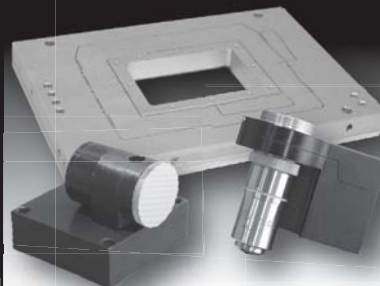
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arranged for his staff to meet with the US delegation for what the visitors described as particularly productive talks.

High-leverage support

Financing for both trips was supplied by the Richard Lounsbery Foundation. The tiny Washington-based philanthropy also has paid for a number of visits by prominent US scientists and university presidents to Iran and for part of the cost of a scientific delegation to Syria last year (see PHYSICS TODAY, May 2009, page 28).

Lounsbery board member Jesse Ausubel calls the foundation's focus on scientific diplomacy a "high-leverage" investment for an organization that hands out a total of \$2.5 million to \$3 million annually. The foundation supports the AAAS diplomacy program and has even funded scientific exchanges between nuclear-armed rivals India and Pakistan. Turekian, who has been on scientific missions to North Korea, Cuba, and Syria, says that in addition to strained or nonexistent relations with the US, those three nations share a desire for economic development and aspire to the US model in which innovations developed from academic institutions are commercialized by industry. He's now considering arranging a visit to Myanmar, another authoritarian-ruled pariah state that has little contact with the outside world.

The CRDF, which was established in 1995 to help former Soviet nuclear weapons scientists find new work, began broadening its portfolio five years ago and now has projects in 30 countries, says president Cathleen Campbell, who was among the DPRK visitors. "We know that in terms of going forward [with DPRK scientists], we need to continue those person-to-person contacts and continue to have opportunities for face-to-face meetings here or there," Campbell says.

Contacts are key

One tangible result of the Syrian trip has been the selection of an early-career scientist from the University of Damascus to become the first Syrian science fellow at AAAS, says Turekian. That individual was due to begin her four- to five-month-long fellowship late last month (after PHYSICS TODAY went to press). As for Cuba, he says the two sides will be identifying potential topics of mutually beneficial research. Possibilities might include jointly investigating the ecosystem of the Gulf Stream, which passes between the two nations, or hurricanes, which regularly pass over Cuba.

Ausubel, who directs the program for the human environment at the Rockefeller University, says the contacts that are made between US scientists and counterparts in countries that have little or no diplomatic links to Washington are valuable in and of themselves, regardless of whether they evolve into more formal scientific cooperation. "The process is the product in this case," Ausubel says. "Effective communication in international relations relies upon accurate transmission. So having Americans with an accurate understanding of opening and maintaining channels is an end to itself."

Ausubel draws a parallel to his experience working from 1979 to 1981 at the International Institute for Applied Systems Analysis, a scientific organization set up by the US and the Soviet Union with the objective of keeping scientific channels open as cold war tensions were peaking. He says that some friendships he made with Russian scientists then have endured to this day.

The expert on North Korea

Few Americans can top former Los Alamos National Laboratory director Siegfried Hecker when it comes to making contacts with scientists in the DPRK. Hecker has made six visits to Pyongyang, so it's no surprise that planners of the December visit sought his advice. "I encouraged them, and I think that it's a good idea to develop as many links as possible with the scientific and educational communities in the

DPRK," says Hecker. He adds, however, that "the difficult part is the follow-up and follow-through."

Hecker, an expert on plutonium, had no problem with follow-ups. The North Koreans used his visits to "reduce ambiguities" about the state of their nuclear program. On three of his trips, he was shown around the Yongbyon plutonium production complex. The first occurred soon after the DPRK withdrew from the Treaty on the Non-Proliferation of Nuclear Weapons in 2003, when all dialog with the US had ceased. Hecker recalls his hosts handing him a jar containing half a pound of plutonium.

"What they told me about their nuclear program has been remarkably accurate," Hecker says. He learned, for example, that despite years of attempts, the North Koreans haven't been able to get a 60-MW graphite reactor up and running. Had they succeeded, the country could be producing enough plutonium each year to construct about 10 nuclear weapons—putting it on a par with Pakistan's and India's nuclear weapons capabilities. Instead, the regime can only get one bomb's worth of fissile material annually from a 5-MW reactor. As a result of his visits, Hecker says, "I think we have a significantly better picture of their plutonium program." But he adds that the same can't be said about the country's uranium enrichment capability, a years-long enterprise that the DPRK refused to acknowledge until late last year.

David Kramer ■

web watch

To suggest topics or sites for Web Watch, please visit <http://www.physicstoday.org/suggestwebwatch.html>. Compiled and edited by Charles Day

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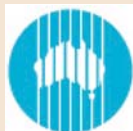
On 10 January in Padua, Italy, a ceremony was held to mark the end of the largest astronomy education and outreach initiative in history: the International Year of Astronomy. **Astrosphere** aims to sustain IYA's goals by providing a platform for online outreach. Among the site's expanding menu of offerings are the 365 Days of Astronomy podcast and the Astronomy 2009 island in Second Life.

<http://windwithmiller.windpower.org/en/kids>

Wind with Miller is an education site devoted to teaching schoolchildren how electricity is generated from wind. The site was produced with the support of several Danish governmental and nongovernmental organizations.



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