Panel of experts encourages scientific collaboration with Iran
AAAS conference examines partnership potential since signing of nuclear agreement

By Michaela Jarvis

Increased collaboration with Iranian scientists could speed the development of important solutions to global challenges in many fields, experts said at the AAAS Science Diplomacy 2016 conference, and a broadening range of organizations, including AAAS and the National Academies, can help make it happen.

Throughout the “Opening Doors to Iran” session of the 5 May conference, one of eight sessions on diverse topics in science diplomacy, panelists cited far-ranging evidence of the capability of Iran’s scientific community as a collaborative partner. They described the problems Iran is experiencing—such as energy shortages, HIV/AIDS, and air and water pollution—as opportunities for science and technology engagement to positively impact people’s lives. Referring to the nuclear agreement signed last July and subsequent statements signed or released by the United States, Iran, and five other nations, panelist Ali Douraghy, of the National Academies of Sciences, Engineering and Medicine, said, “There are certainly very positive opportunities for potential scientific cooperation outlined.”

Over the years, Iranian scientists, physicians, and other health experts have collaborated with their U.S. counterparts through partnerships fostered by the National Academies, the National Institutes of Health, AAAS, and CRDF Global, on topics such as water, foodborne diseases, neuroscience and drug abuse, noncommunicable and infectious diseases, health disparities, and bioethics. The 5 May panel was convened by CRDF Global, a nonprofit that connects emerging scientific communities with the international scientific community.

“Scientific collaboration is among the best ways to show that the two countries can productively work together, as opposed to work against each other, by helping tackle the world’s greatest challenges and to build trust,” said Tom Wang, AAAS’s chief international officer and director of the AAAS Center for Science Diplomacy.

In October 2013, newly elected Iranian President Hassan Rouhani made a speech about restoring academic freedom at the country’s universities following nearly a decade of interference in academic affairs by a conservative government. Science International News Editor Richard Stone, who had visited Iran back in 2005, saw this as a crucial moment. “I thought, ’This is a message that is interesting for the international science community. I’d like to see what it means on the ground,’” said Stone, who also participated in the conference panel.

His subsequent visit in 2015 resulted in a series of articles documenting the state of science and technology in Iran. As his reporting bore out, some of the projects he had seen beginning to blossom back in 2005, such as plans for a top-caliber Iranian National Observatory, were regaining momentum after years of halting progress due to internal political pressures and international sanctions imposed on Iran over its nuclear program.

Stone described how Iranian scientists were able to push ahead on international-quality research despite the sanctions. The Iranian Light Source Facility, a synchrotron project, has made remarkable progress in overcoming sanctions, thanks in large part to improvisation. Similarly, when scientists were unable to import sensors to measure seismic stress on infrastructure such as dams and bridges in a country laced with faults, they invented their own that are now used throughout the country and are even starting to be exported.

“I was struck by the ingenuity of many of the Iranian scientists in the face of sanctions,” said Stone.
Somewhat surprisingly, stem cell research was one of the fields that progressed, after Iranian scientists, unsure of what was permissible, petitioned Iran’s Supreme Leader Seyyed Ayatollah Ali Khamenei to issue a fatwa on stem cells. The ruling in 2002 legalized any kind of stem cell research except for human cloning, a policy more liberal than that of the United States. Iranians, given the go-ahead from Khamenei, actively advanced the research, Stone said.

Alex Dehgan, who has worked for the U.S. Department of State and has also served as chief scientist at USAID—invoicing one of his main requirements for successful science diplomacy—said that the benefits of scientific engagement with Iran would accrue to both partners because of the strength of science and technology in Iran. The Iranian Revolution of 1979 brought university education to a much broader segment of the population than is seen in other countries in the region, and Iranians have long cultivated a cultural pride in scholarship and creativity. Iran is now ranked fourth in the world in terms of its growth rate in publishing scientific articles, said Dehgan, co-founder of Conservation X Labs.

At Stanford University’s Ph.D. program in electrical engineering, said panelist Douraghy, Iran’s Sharif University of Technology is known as the world’s top institution for preparing undergraduates in the field. Dehgan pointed out that Iranian students who studied at Stanford and other U.S. universities and then stayed in this country went on to found companies ranging from eBay, to Dropbox, to Hot Pockets.

“We’re missing out,” said Dehgan, “[if we’re not] engaging that community.”

Whatever their talents and preparation, though, Iranian scientists have been isolated from the rest of the world, said Stone, and organizations like AAAS can perform a crucial function in connecting them to the international science community.

“Western scientists are not aware of who the talented scientists are in Iran and North Korea and other isolated countries,” said Stone. “A role for nongovernmental organizations like AAAS can perform a crucial function in connecting them to the international science community.”

Still, there are significant challenges to collaboration, panelists said. Rouhani was able to oversee the nuclear agreement with the West and is seen as having a mandate from the Iranian public for opening up the country. However, an ongoing tension exists between elected officials like Rouhani and other extremely influential leaders.

Furthermore, although the nuclear agreement is gradually lifting nuclear-related sanctions, other sanctions remain in place, and panelists reported extensive confusion over what kinds of scientific collaboration are permitted and can get licenses required to proceed. William Colglazier, a senior scholar in the AAAS Center for Science Diplomacy and editor-in-chief of the Science & Diplomacy quarterly, asked the panelists how the U.S. government could best encourage science diplomacy and engagement with Iran. Colglazier is a former science and technology advisor to the U.S. Secretary of State.

“Where the government can help,” said Dehgan, “is by giving signals, guidelines” regarding what is permissible, and perhaps granting “larger blanket licenses” for research projects.

U.S. universities, said panel moderator Siri Oswald, sometimes misunderstand the restrictions on scientific exchanges and needlessly abandon efforts to engage. “They back off of opportunities that, frankly, they could engage in,” said Oswald, interim vice president for programs at CRDF Global. A publication by the Institute of International Education entitled “Reinventing Academic Ties,” which contains a helpful guide on the impact of sanctions on academic exchanges, offers information for U.S. scientists and institutions looking to collaborate with Iranian researchers, said Douraghy, who is a senior international programs officer for the National Academies.

“In this time, we should take advantage of the good will and test the system, and see what kind of collaborations we can start under current conditions,” said Stone, who urged environmental scientists to turn their attention to a catastrophe occurring in northwestern Iran, where poor water management and drought have caused Lake Urmia to lose 80% of its water, creating a salt desert that threatens crops and people.

“These sorts of environmental problems are really amenable to international cooperation,” he said. “They’re an easy sell” to the U.S. government, the Iranian government, and to funders, Stone added, “and if they’re successful, they’re going to sow a lot of good will with the Iranian people.”

Meanwhile, Dehgan sees the current generation of technology entrepreneurs in Iran as having the most potential to build bridges with partners in the West. “There’s an unbelievable tech community in Iran right now that I think gives us the most hope,” said Dehgan, citing an opportunity for change in Iran that will come, not necessarily through government, “but change driven by the people themselves, driven by entrepreneurs, driven by scientists.”
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