SCIENCE DIPLOMACY

Arab, U.S. Women Scientists Build Network at Landmark Kuwait Forum

KUWAIT CITY—It was, in some respects, a typical science conference, with panels on career development, workshops on publishing and grant-writing, and a busy schedule of social events each night. But this one was different: It brought scientists and engineers from throughout the Middle East, Northern Africa, and the United States to an Arab capital for talks that stressed partnerships and cooperation—and virtually all of the participants were women.

At the opening of the International Conference on Women Leaders in Science, Technology, and Engineering, co-sponsored by AAAS, many of them said they’d never attended anything like it. Accomplished Arab women often “are not only unseen, but are hidden from each other,” said Ikhlas Abdalla, an expert in human resources development for the Arab Fund for Economic and Social Development.

While it explored challenges still confronting women scientists and engineers in the Arab world—and in many other parts of the world—the conference also revealed diversity and progress not often conveyed in Western news reports from the region. And in a time of rising mistrust and conflict, the conference showed a way toward constructive engagement of nations and cultures based on science and technology.

“In addition to just meeting people and learning about the diversity in the region, there was a helpfulness that filled the room,” Shirley Malcolm, head of Education and Human Resources at AAAS, said afterward. “You had a sense that we would like to work with the United States to an Arab capital for talks that stressed partnerships and cooperation—and virtually all of the participants were women.”

AAAS’s delegation was led by Chief Executive Officer Alan I. Leshner, who also serves as executive publisher of Science, and also included Malcolm; Science Executive Editor Monica Bradford; and Chief International Officer Vaughan Turekian, who played a central role in organizing the event.

AAAS in recent years has been building its engagement with the Middle East and Northern Africa. Officials have written and held conferences on the state of science in Iraq. AAAS Science & Technology Fellows have organized the creation of the Iraq Virtual Science Library and a conference in Jordan on the uses of geographic information systems to foster sustainable urban development. This month, on 19 February, a half-day symposium on the role of women and innovation in the Arab world was held at the AAAS Annual Meeting in San Francisco.

On the morning that the Kuwait conference opened, the Kuwait Times published a commentary co-authored by Leshner and Farkhonda Hassan, a professor of geology at the American University in Cairo, a member of the Egyptian Parliament, and secretary-general for the National Council for Women in Egypt.

“In a world growing ever-smaller, no single nation, no region or culture, owns science,” they wrote. “While researchers may speak many languages, they share a common dedication to science as a rational process of problem-solving that holds enormous promise for the well-being and advancement of all humanity.”

In the opening address delivered on behalf of the Kuwait prime minister, Deputy Prime Minister Mohammad Sabah Al-Salem Al-Sabah said young women “are becoming an important asset” to the nation’s advancement. “We want more women to take part in the developmental process of the nation through their contributions to the society on firmly rational grounds,” said Al-Sabah, who also serves as foreign minister.

Paula Dobriansky, the U.S. undersecretary of state for democracy and global affairs and a leader in developing the idea for the event, expanded on that sentiment in a later address. “International science cooperation is at its best when it provides opportunities for women, and draws on their resources and strengths, thus greatly expanding our capacity for achievement,” she said. “Science and technology empower individuals, and empowerment gives hope—which is the antithesis of many of the problems that fuel the world’s current conflicts.”

Leshner, in one of the opening talks of the forum, emphasized the theme of global S&T collaboration in the post-9/11 world. His talk elicited a poignant exchange with epidemiological psychiatrist Rafia Ghabash, president of both Arabian Gulf University in Bahrain and the Arab Network of Women in Science and Technology. She expressed regret for the attacks of 9/11 and acknowledged that in the current climate it will take time to repair relations between Arabs and Americans.

“I would like, at this conference, to talk seriously that we would like to work with the American people—but outside the political agenda,” Ghabash said.

Leshner immediately agreed. “We believe science is the apolitical, or nonpolitical, vehicle, and should be used for far greater communication generally around the world,” he said. “[It] can be a very important vehicle for peace.”

Samira Islam, head of the Drug Monitoring Unit at King Fahd Medical Research Center in Jeddah, Saudi Arabia

SCIENCE POLICY

New Site Tracks S&T Legislation

With climate change, national security, innovation, and other science- and technology-related issues prominent on the U.S. national agenda, AAAS has launched a new site that will track S&T legislation as it moves through Congress.

You can find the list at www.aaas.org/spp/septracker.

The site details the names, sponsors, and status of bills pending in the U.S. Senate and House of Representatives and includes links to other useful resources. It will be managed and updated regularly by the AAAS Center for Science, Technology, and Congress.

Published by AAAS
The progress made by Arab women—and the challenges still confronting them—were captured in a presentation by Samira Islam, a pioneering Saudi Arabian pharmacologist and scholar who serves as head of the Drug Monitoring Unit at King Fahd Medical Research Center in Jeddah. In earlier writings, she noted that the tenets of Islamic belief stress gender equality and that the teachings of the Prophet Muhammad require every Muslim to seek knowledge.

But, she said at the conference, the West often sees the Arab world—and Arab women—simplistically. With 321 million people in 22 countries, the region “cannot be viewed as a single monolithic community in terms of endowment or human development,” she said.

Citing 2005 statistics reported by UNESCO, Islam reported that women comprised 74% of science graduates in Bahrain, 71% in Qatar, and 47% in Lebanon; in the U.S., 43% of science graduates were women, and in Japan, 25%. In Saudi Arabia, among six major universities that admit women, nearly 45% of science graduates in 2004-05—a total of 8700 in all—were women.

Once out of school, however, the opportunities available to Arab women are diminished again. In Saudi Arabia and other countries, jobs in S&T education and research go disproportionately to men, as do government grants for research. “The glass ceiling is still existing for women in the Arab region and around the world,” she said.

In presentations and informal discussions, the Arab women detailed the cultural practices that create obstacles: family values that often are biased toward the success of male children; expectations that women are responsible for cooking and child-rearing; social restrictions on interacting with men, which makes networking difficult; and limited options for mentoring.

“The problem is not the number of women attending schools, or high schools or universities—the problem is what are they doing afterwards,” said microbiologist Maysa Azzeh, a Palestinian and assistant professor in the Department of Immunology and Microbiology at al-Quds University in Jerusalem. “Most of them and their parents are actually more worried about are they going to get married and have kids or not. And this is not only an Arabic problem—it is an international problem. But it is more focused and clear in our society.”

By the meeting’s end, participants had identified strategies for further progress: mentoring; local and international networking; establishing local science centers for students; giving boys and girls the same opportunities.

And whether from the Middle East, Northern Africa or the United States, they expressed hope that the Kuwait conference would be followed by sustained action—exchanges, research collaborations, workshops, and conferences—that would contribute to a cross-cultural engagement of women, and men, in S&T.

In the closing minutes of the forum, Fatima Ahmed Alhadi, an assistant professor of plant physiology at the University of Sanaa in Yemen, asked for the microphone. She was dressed conservatively—a black robe, her hair covered in a black scarf, her face hidden behind a black veil, except for her eyes.

“Women scientists in Yemen are very much underestimated,” she said confidently in English, “maybe because we come from a country that really doesn’t believe in women as a woman in any field, especially in science. We have very distinguished scientists and very active girls who would like to be distinguished in science, but they don’t have that chance, or they don’t get that chance…. We would like, after we come home, to be more distinguished in our country and be more active and achieve all our expectations in the field of science.”

EDUCATION

Project 2061 Offers Climate Change Teaching Guide

Project 2061, AAAS’s influential science literacy initiative, has released a new guide that will help prepare educators to teach today’s students about the science and societal implications of changes in the global climate that are already shaping the future.

The teaching guide, Communicating and Learning About Global Climate Change, is based on Science for All Americans and the Atlas of Science Literacy, two seminal science education documents published by Project 2061. Using these two resources, the guide describes what adults should know about climate change and then shows how students work toward that knowledge as they move from kindergarten through high school. The guide was included in a special teachers’ kit distributed during a town hall event on climate change held this month at the AAAS Annual Meeting in San Francisco.

“This guide brings together several different strands—from the water cycle and the atmosphere and the dynamic nature of ecosystems to evaluating scientific evidence, using energy resources, and making decisions about technology—that are essential to understanding the science of climate change and its implications,” said Jo Ellen Roseman, director of Project 2061.

“By laying out the basic science concepts that are important for understanding climate change and showing how they relate to one another, teachers can gain a good picture of what a science-literate person should know and be able to do as a concerned and well-informed citizen.”

For instance, the guide shows how lessons on the Earth’s resources can lend their way from a first-grader’s discovery of the kinds of fuel used to heat homes around the world, to a fifth-grader’s understanding of pollution and a high school student’s grasp of the economic and social tradeoffs in using different fuel resources.

Project 2061, a long-term project of AAAS to boost American understanding of science and mathematics, produced a similar teachers’ guide on evolution for the 2006 Annual Meeting in St. Louis, which “was very popular,” according to Mary Koppal, Project 2061 communications director.

The teachers’ kit also included a classroom version of the game “Stabilization Wedges,” developed by Princeton University’s Carbon Mitigation Initiative (CMI). Teams play the game by choosing a variety of strategies—from more fuel-efficient cars to nuclear power—to keep world carbon emissions from doubling over the next 50 years. The game has its roots in a 2004 Science article by Princeton researchers Robert Socolow and Stephen Pacala. There are no right or wrong answers in the game, but judges pick a winner based on how well they defend the merits of their particular mix of strategies.

“It’s always worked well in the environments we’ve played with, researchers and industry folks, but we thought if we put it in the hands of 500 teachers, they would probably come up with all kinds of fantastic ideas,” said Roberta Hotinski, a science communicator at CMI who helped develop the game.

Along with the guide and game, teachers at the town hall received a copy of AAAS’s new video on climate change, which focuses in part on the Alaskan village of Shishmaref, and a letter of participation reflecting three hours’ worth of professional development. To receive a copy of the Project 2061 teaching guide, contact Mary Koppal at (202) 326-6643 or mkoppal@aaas.org.

—Becky Ham