



SCIENCE SUPPORTERS

DOS goes big at world students science event

By Suzanne S.K. Whang, editor, Office of Public Affairs, Bureau of Diplomatic Security

The State Department went all out for its first involvement in the USA Science & Engineering Festival (USASEF), which took over the entire Walter E. Washington Convention Center in Washington, D.C., in April. The festival's 325,000 young attendees from all over the world saw hundreds of exhibits, including several Department-sponsored booths. At one, volunteers in bulletproof vests encouraged kids to crawl around a six-ton armored vehicle. At others, students jumped up and down on a seismometer used to detect nuclear explosions or took a virtual field trip to Mars.

According to Bruce Matthews, then-managing director of the Office of Foreign Missions (OFM), the Department got involved in the three-day fair, the largest celebration of science, technology, engineering and math (STEM) in the world, to respond to President Obama's call to inspire the next generation of scientists and engineers for the sake of the nation's wellbeing and national security.

Barbara Starr, special government employee in the Bureau of Arms Control, Verification

and Compliance (AVC) said, "Because most people do not think of the Department as a STEM-rich environment, participating in USASEF provided an unparalleled opportunity to showcase some of our international and domestic programs in an engaging and interactive way to thousands of students, parents and teachers, hopefully both educating our visitors and inspiring future STEM graduates to think about the Department as a career."

William Heidt, chief of staff for the Under Secretary for Economic Growth, Energy and the Environment, added that the Department's involvement made clear that it is "a frontrunner in STEM in the federal government."

Secretary of State John Kerry, in a video broadcast, told attendees that "science and technology are obviously central to America's diplomacy, and our diplomacy is central to advancing American science and technology. That's why President Obama and I are absolutely committed to making sure that our risk-takers and innovators can dream big

and reach higher than ever before."

Prior to the festival, several under secretaries, including Patrick Kennedy (Management), Catherine Novelli (Economic Growth, Energy and the Environment) and Rose Gottemoeller (Arms Control and International Security) strongly endorsed the Department's involvement. Months before festival doors opened, Department volunteers planned interactive exhibits, recruiting events, a VIP reception, STEMatState branding and a social media campaign.

Among the Department's exhibits was one offering attendees a "field trip" to Mars. Designed by the Bureau of Educational and Cultural Affairs and NASA, this field trip involved online interaction with middle school students from the United States, Argentina and Nicaragua using the Google+ service called Hangout on Air. With it, students explored the surface of the Red Planet and learned about the Mars Curiosity rover. This program was viewed by close to 11,000 participants in 40 countries, many of them young "astronauts" in classrooms.

In another exhibit, the Bureau of Diplomatic Security (DS) brought a six-ton armored vehicle that youths were allowed to “test drive.” Older students were fascinated by the vehicle’s cutting-edge countermeasures and communications systems, which provide 360-degree situational awareness for protective details. The DS special agent at the exhibit wore full tactical gear.

DS Security Engineering Officer Nathan Mills said one tech-savvy student asked why the DS explosive-detection equipment relies on radioactive ionization. “That’s quite a sophisticated question from someone so young,” Mills noted.

“We had a number of kids express an interest in becoming security engineering officers,” said DS Special Agent Star Hy. “They also enjoyed touching the slabs of bulletproof glass with real bullets embedded in them.”

OFM provided volunteers for the Government Printing Office (GPO) booth, and let attendees examine secure documents, such as the diplomatic licenses, protocol identification cards and tax exemption cards that OFM and GPO used.

At another Department exhibit, AVC demonstrated a seismometer that it uses to detect nuclear explosions. AVC highlighted the multiple scientific disciplines—such as chemistry, physics and biology—used to detect these explosions in any environment, anywhere in the world. The display also showcased several types of radiation-detection equipment and the global sensor networks that search for signs of nuclear explosions, supporting the bureau’s mission of verifying compliance with nuclear test ban treaties.

At the display set up by the Bureau of Arms Control and International Security Affairs (T), meanwhile, visitors learned that T uses the latest advancements in nuclear physics, chemistry, biology and emerging technologies to stop the spread of weapons of mass destruction. To clear landmines and unexploded ordnance in post-conflict countries, T trains using 3-D-printed models of common military ordnance. Students who handled these models were surprised to learn how much destructive power the real versions pack.

As Public Affairs Specialist David McKeey put it, “These models are transportable and relatively inexpensive to create, so they provide a quick and easy way to get our demining technicians trained faster and out in the fields sooner to save more lives.”

“How safe is your medicine?” asked a sign at the Bureau of Economic and Business Affairs (EB) exhibit, where volunteers in white lab coats showed students how to test for the active ingredient in household medicines like Tylenol. EB set up a mini drug-testing lab where students mixed solutions and watched for the color reactions that determine the identity of the medicine. Foreign Affairs officer Nicolette Louissaint said the youths liked watching the Vortex-Genie, an agitator that shakes up the solutions.

The Office of Management Policy, Rightsizing and Innovation set up its Mobile Green Lab, which included a solar panel, small-scale edible community garden and rainwater harvesting and filtration system. Eco-Management Analyst Caroline D’Angelo said, “The kids loved the water recycler and the plants. When they saw the rainwater harvesting demonstration, they said, ‘So cool! Can I build this too?’”

The Bureau of Consular Affairs (CA) exhibited its facial recognition technology. It held a facial recognition challenge, where youths matched faces in a simulated database displayed on iPads. “We explained to them that our real database has over 200 million faces, which our adjudicators use to make sure we are issuing visas or passports to validated users,” said CA Branch Chief Angela Miller. “Some of these kids—the ones who took their time—were surprisingly good at this.” Students also enjoyed scanning their fingerprints and learning how the Department uses biometrics to weed out fraudulent visa and passport applicants.

At the display sponsored by the Bureau of Oceans and International



Secretary of State John Kerry welcomed more than 250 guests at this VIP reception in the Main State Exhibit Hall on April 25, the evening before the festival opened.

Department of State photo

Environmental and Scientific Affairs (OES), youths learned of the Department’s involvement in global issues like sustainable fishing, marine debris and ocean acidification. OES Public Affairs Officer Christopher Rich said the youths “were amazed to learn how much marine debris is littering the ocean and how it affects fish and animals, [and] were very intrigued by a large ball of plastic and fishing line found in the stomach of an albatross.”

At the close of the three-day festival, its co-founder Larry Bock said, “Not only is the State Department good at trying to solve global problems with science and technology, but you practice what you preach as good stewards of the environment and in the use of technology in your operations.”

More information about STEM activity in each bureau is available online at state.gov/e/oes/stc/stem/index.htm. ■



Foreign Affairs Officer Nicolette Louissaint, far right, shows a visitor how to test for the active ingredient in this medicine.

Photo by Suzanne S.K. Whang