

## NEET

### UMass Lowell hosts Saudi students

**T**wenty-three sophomore and junior engineering students from King Abdulaziz University (KAU) in Jeddah, Saudi Arabia, were part of the inaugural class of the Nuclear Energy Education and Training (NEET) program at the University of Massachusetts Lowell, held June 25–August 16. The eight-week professional development program, designed to complement traditional academic education, covered nuclear science and engineering topics with classroom lectures and seminars conducted by UMass Lowell professors and industry experts.

According to Sukesh Aghara, director of the NEET program and an associate professor of chemical engineering at UMass Lowell, the NEET program was developed in collaboration with the energy infrastructure construction company Chicago Bridge & Iron. The university submitted the winning proposal for the NEET program after KAU expressed an interest in offering its students an eight-week nuclear energy program to be delivered in the United States. KAU funded the program.

“It was a very competitive process,” Aghara said. “Putting together the proposal was a real team effort, drawing on the university’s long experience in nuclear engineering education and CB&I’s history of nuclear plant design and construction.” Aghara added that UMass Lowell has a long history of working with CB&I and its predecessor companies, Stone & Webster and the Shaw Group. “We have representation from CB&I on our advisory board, and they hire our graduates,” he said.

The NEET scholars were instructed on the fundamentals of nuclear science and engineering, radiation protection, reactor kinetics and dynamics, and reactor systems and safety. The program also included seminars on nuclear plant site selection and construction management.

Key features of the program included hands-on workshops and experiments at

*Nearly two dozen Saudi Arabian students took part in the Nuclear Energy Education and Training program, a short but intensive course on nuclear energy.*



Photo: UMass Lowell

Joined by their instructors, the 23 Saudi graduates of the Nuclear Energy Education and Training program at UMass Lowell display the certificates they earned for completing the intensive eight-week course.

the UMass Lowell Radiation Laboratory, experimental learning, and peer-learning through interactions with university graduate students and young industry professionals. These were supplemented by tours of commercial nuclear power plants, including Pilgrim in Plymouth, Mass., Seabrook in New Hampshire, and Millstone in Connecticut, as well as tours of the Massachusetts Institute of Technology’s research reactor and several industrial facilities.

Aghara said that Commissioner William Magwood visited UMass Lowell and presented a lecture to the NEET students on the Nuclear Regulatory Commission’s response to the Fukushima Daiichi accident in Japan. The students also spent two days in Washington, D.C., where they heard presentations by Peter Lyons, the Department of Energy’s assistant secretary for nuclear energy, and Jack Ramsey, special advisor in the NRC’s Office of International Programs. While in Washington, the scholars also par-

ticipated in a nuclear security workshop planned by the U.S. State Department in collaboration with the University of Tennessee at Knoxville.

Currently, Saudi Arabia is seeking to develop its domestic nuclear energy infrastructure and plans to construct 16 nuclear power reactors over the next 20 years, according to the World Nuclear Association. Aghara said that UMass Lowell, with its long-standing nuclear science and engineering academic programs and 1-MW research reactor and associated laboratories, is well-positioned to help Saudi Arabia meet its coming demand for a highly skilled and technically trained workforce.

“Saudi Arabia has set aside \$500 billion from oil revenues to develop alternative energy sources,” Aghara said. “The Saudis know that fossil fuel is a finite resource, so they have put together an aggressive plan to tap solar, wind, and, of course, nuclear power to meet the rising electrical demand of its

growing population.”

Other Arab states, including the United Arab Emirates, Qatar, and Jordan, are also pursuing nuclear energy development and will need to develop a well-educated and -trained indigenous workforce.

“We can provide education and training to engineers and technicians who will be operating and maintaining the reactors in their respective countries,” Aghara said. “UMass Lowell is the first academic institution to host such a large number of Saudi students for nuclear engineering education and training. We hope NEET will pave the way for more interactions with King Abdulaziz University and be a model for other international university partnerships and collaborations that promote faculty and student exchange.”

In addition to Aghara, other members of the NEET faculty include chemical engineering professors John White and Gilbert Brown, as well as a number of nuclear industry experts, including Reiner Kuhr, of CB&I.