This year 37 early-career engineers from more than 10 countries attended an intensive course at INL to hone modern nuclear engineering skills.

International summer school trains nuclear professionals in modeling and safety analysis

By Casey O'Donnell, *for INL Communications & Governmental Affairs*

This isn't your average summer school.

An intensive course on nuclear modeling, experimentation and validation, the MeV Summer School seeks to prepare early-career nuclear engineers from around the world for some of the key challenges facing the modern nuclear energy industry. For two weeks in July, 37 students from more than 10 different countries converged at Idaho National Laboratory to attend the fifth annual MeV course. These students explored a number of concepts related to nuclear safety and modeling.

This year's course focused in particular on advances in nuclear reactor safety analysis. The course sought to encourage discussion of Japan's Fukushima plant accident and the future of nuclear energy. Students were grouped into teams and assigned final projects that addressed challenging reactor safety questions. The teams were mentored by senior scientists and professors from industry, academia and national laboratories who are leaders in their respective fields.

Miriam Däubler, a nuclear researcher at the Karlsruhe Institute of Technology in Germany, was one of this year's participants.

"The final project was very comprehensive," said Michael Holten, a Ph.D. student at Oregon State University. "It encouraged us to not only interact with the lectures, but go beyond them."

The teams certainly had plenty of information to work with. From fluid dynamic modeling to reactor history analysis, the course topics aimed to give students a thorough understanding of nuclear modeling and its applications. Miriam Däubler, a nuclear researcher at the Karlsruhe Institute of Technology in Germany, noted that the course especially addressed the verification and validation aspects of modeling.

"That isn't something we really did in school," Däubler said. "The main organizing point of the course was very good in that way."

Sara Bortot, an Italian nuclear engineer at the Paul Scherrer Institute in Switzerland, participated in this year's MeV school at INL.

Däubler also emphasized the intensive nature of the MeV school, a sentiment shared by her classmate Sara Bortot.

"The course was very demanding," said Bortot, an Italian nuclear engineer working at the Paul Scherrer Institute in Switzerland. "Having class 12 hours a day, paired with working on a final project in our spare time, was exhausting."

The course's exacting nature was a frequently repeated topic among the students. However, the students also emphasized the MeV school's efficacy.

"This course provided ample information on where the field currently is, as well as its past and its future," said E. Hemanth Rao, a nuclear scientist from India. "The kind of information that you could maybe teach yourself through books over the course of months, this class gave in about 10 days."

The course's comprehensive nature may be one reason it attracts such a diverse range of nuclear energy professionals. Students hailed from the United States, Canada, China, Germany, India, Italy, Japan, Jordan, the Republic of Korea and the Netherlands. Professors came from industry, research and academia from a number of different countries. In addition, the course has the support of INL, Idaho State University, Argonne National Laboratory, the Center for Advanced Energy Studies at INL and Oak Ridge National Laboratory.

The MeV Summer School will be held again next year at Argonne National Laboratory. Individuals seeking more information can look on the course's website, MeVSchool.org.

(Posted Oct. 9, 2014)