

# ANS NEWS

A P U B L I C A T I O N O F T H E A M E R I C A N N U C L E A R S O C I E T Y

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## Five new ANS Fellows named

The highest grade of ANS membership has been granted to the following new ANS Fellows in recognition of their outstanding contributions to the advancement of nuclear science and technology. The Fellows were recognized by ANS President Michael Corradini on November 12 during the opening plenary session of the 2012 ANS Winter Meeting.

**Audeen W. Fentiman**, ANS member since 1983 and a professor of nuclear engineering and associate dean of engineering at Purdue University, for her pioneering national leadership in nuclear education and outstanding technical achievements in nuclear safety, waste management, and national nuclear security.



Fentiman

**Bojan Petrovic**, ANS member since 1989 and a professor at the Georgia Institute of Technology, for his original and significant contributions to the advancement of nuclear technology, including the design of small modular reactors, investigation of advanced fuel



Petrovic

**Toshikazu Takeda**, ANS member since 1978 and director and specially appointed professor at the Research Institute of Nuclear Engineering at the University of Fukui, for his pioneering contributions to the development of advanced methodologies and codes for application to the reactor physics of current and next-generation fast reactors, including cross-section generation, cell homogenization, uncertainties estimation, 3-D transport algorithms, 3-D transport benchmarks, and the formulation of uncertainty propagation in Monte Carlo depletion.



Takeda

**John C. Wagner**, ANS member since 1991 and group leader of design, safe-



Wagner

ty, and simulation integration at Oak Ridge National Laboratory, for his development and demonstration of hybrid deterministic–Monte Carlo methodologies that have enabled a consistent, accurate, and efficient Monte Carlo solution of the Boltzmann radiation transport equation over the full spatial domain of very large and complex problems.

**X. George Xu**, ANS member since 1995 and professor and head of the nuclear engineering program at Rensselaer Polytechnic Institute, for his groundbreaking research and technical leadership in computational phantoms and



Xu

Monte Carlo simulation methods for nuclear engineering, health physics, and medical physics problems, which resulted in significant advancements in the field of radiation dosimetry and impacted practices in radiation protection, imaging, and radiotherapy both nationally and internationally.

## MEMBERS BEHIND THE SCENES

### Offering a nuclear science course to the public

Larry Foulke, a past president of ANS (2003–2004), transitioned from a 40-year career at Westinghouse and Bettis Atomic Power



Foulke

Laboratory to teach the University of Pittsburgh's first nuclear engineering course in 2006. While nominally post retirement, Foulke remains as busy as ever. His latest project is an online course—A Look at Nuclear Science and Technology—to be offered free to the public through Coursera ([www.coursera.org](http://www.coursera.org)), with the support of the university, where Foulke is an adjunct professor, director of outreach, and now interim director of the nuclear program.

"I was asked by the dean of the Swanson School of Engineering to develop a course for Coursera," Foulke explained. "I was receptive to the request because of our profession's need to reach the general public with educational material on nuclear science and technology; it also allows us to give visibility to Pitt's somewhat unique nuclear program."

The university's nuclear program was launched in the 2006–2007 academic year with a series of three undergraduate nuclear engineering courses. The program now offers an undergraduate certificate and a master's degree in nuclear engineering,

both developed through a constituency-driven education model. Companies located in and near Pittsburgh, Pa., including Westinghouse, Bettis Atomic Power Laboratory, Bechtel Plant Machinery Inc., and FirstEnergy Nuclear Operating Company, have helped shape the university's offerings, and many of the program's adjunct instructors are employed by them. Currently, 11 graduate-level courses are offered, with a focus on operations and safety, and all but two of those courses are delivered via the Internet (although students may attend in person), which makes the University of Pittsburgh a natural choice to offer an online nuclear course to the public.

In October 2010, the university appointed longtime ANS member John Metzger as the full-time director of the nuclear program, and in that role, Foulke said, Metzger did an excellent job of expanding the program and obtaining funding for course development and research, while earning the respect of instructors and students. "The great tragedy facing us now is that Dr. Metzger died unexpectedly on October 12 while in Atlanta for an ANS activity," Foulke said. "For me, John's death was not only the personal and tragic loss of a dear colleague who was making a difference, but it has also required me to step back into the role of interim director of the nuclear program."

Foulke has prepared a videotaped introduction to the Coursera course that is available for viewing at [www.coursera.org/course/nuclearscience](http://www.coursera.org/course/nuclearscience).

Coursera offers more than 200 courses in 20 categories, including computer science, education, math, medicine, and the physical sciences, taught by top faculty at respected universities. The nuclear science and technology course is being designed for educated individuals who may not have a strong background in science but who do have an interest in the subject. The seven-week course will include lectures, homework, and online discussions and will require about four to six hours of study per week.

"There are currently over 6,000 course enrollees—and we haven't even announced a start date for the course yet! We consistently get a few hundred new enrollments every day," Foulke said.

The University of Pittsburgh is putting more than its name behind the effort. The university's Center for Instructional Development and Distance Education will produce the videos and obtain copyright clearance for many of the materials used in the course. Graduate assistants will be asked to act as facilitators and provide support for students, and the university will provide instructor compensation. Foulke is dedicating much of his time to the project.

"I have conceptualized, organized, and storyboarded the entire class," he said. "Now I am going back and filling in modules with content. Each module needs graphics and attention to how the material is presented. After that is

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