

NE News

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Christine Goodson and Pablo Vaquer standing in the Radiation Portal Monitor used for the RPM exercise

Oak Ridge National Lab Trip Safeguards Laboratory

A group of ENU 4505L- Nuclear Engineering Lab students traveled to Oak Ridge, Tennessee, the week of March 11 to the 16, to spend a week at the Oak Ridge National Lab Safeguards Laboratory. The students spent the week at ORNL conducting experiments relating to radiation portal monitors, uranium enrichment measurements, and holdup measurements, touring facilities such as the Oak Ridge Graphite Reactor and a Canberra crystal-growing facility, and attending lectures concerning nonproliferation and various radiation detection techniques.

Monday at ORNL started bright and early with an introduction to the Safeguards Laboratory staff and a safety briefing. After a presentation about nonproliferation and the International Atomic Energy Agency (IAEA), an exercise was conducted using handheld radiation detectors. The detectors were used to locate and identify twelve unknown sources hidden in various locations around the safeguards laboratory. After lunch, the students were divided into two groups to participate in an exercise using Radiation Portal Monitors (RPM), which are the monitors located at airports, borders, etc., following a brief lecture on how RPM operate. One group of students was given six sources of varying strengths which they tried to smuggle through the detectors (which are located in the RPM). The remaining students were "inspectors" who had to develop the best method of recovering every one of the sources, even ones the detectors failed to locate. The day concluded with a tour of a Canberra high purity germanium (HPGe) growing facility.

Tuesday began with a presentation on two different software programs, which can be used to determine the enrichment of uranium sources, In-situ Object Counting System (ISOCS) and Active Well Coincidence Counters (AWCC). After a tour of the Supercomputer located at ORNL, an exercise was conducted based on the determination of the enrichment of various uranium sources.

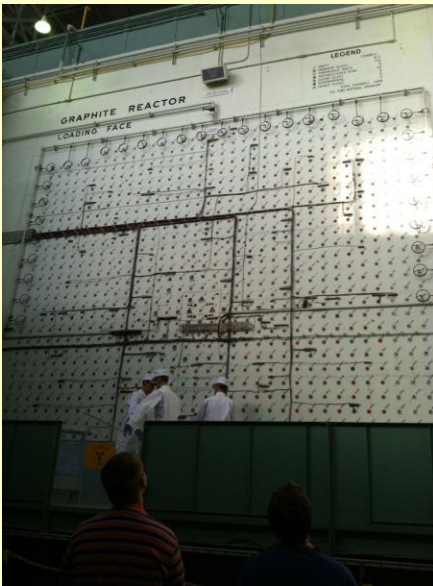


ORNL Supercomputer, signed by George W. Bush, Al Gore, and Winston Churchill, Jr., among others.

Wednesday and Thursday were spent learning about and conducting holdup measurements in a team competition between the students, who were divided into three groups. The three groups were given four different pieces of equipment which would be located in a nuclear facility, and using handheld detectors and a holdup measurement system software (HMS4), instructed to determine the amount of uranium, in grams, located in each piece of equipment. The exercise was fairly time-consuming, but was a valuable learning experience on the methods and importance of holdup measurements, which are a very important aspect of safeguards and nonproliferation.



Christine Goodson, Pablo Vaquer, Jen Musgrave, and Diego Garcia conducting holdup measurements on a large piece of duct



Kyle Ramey and Jon Hamilton studying the loading face of the ORNL Graphite Reactor, where fuel rods and control rods are

The trip concluded with presentations of certificates marking students' completion of the course and a behind-the-scenes tour of the Graphite Reactor located at ORNL. Overall, the trip to ORNL's Safeguards Laboratory was an extremely educational, hands-on learning experience into nuclear safeguards, safety, and nonproliferation.

Announcements

Student Conference: The 2012 ANS student conference will be hosted at the University of Nevada-Las Vegas from April 12-15, 2012. ANS @ UF will be sending several students, including some who will be presenting their research. At this conference, like the Winter Conference, students will be able to network with professionals, utilities and vendors, and government agencies who may offer internships, co-ops, and full time positions. Several schools will also be present to talk with students about graduate school opportunities. This conference will give our students the opportunity to network and explore the city of Las Vegas. Registration is OPEN! Please see link for more information. <http://www.unlvans.org/>

ANS National Elections: The 2012 ANS election balloting is open now through April 24, 2012. ANS National has sent out voting login information to national members. Check your email! You can find the 2012 ANS national election slate here.

<http://www.new.ans.org/about/election/candidates.php>

Internships: Now is the time to start finalizing applications for summer internships. UF Career services sends out notices of internships which are generally forwarded to nuclear list serves. If you have not joined the nuclear listserves, please do so to stay up to date!

Advising for Summer/Fall Semester: Advance registration for the Summer and Fall 2012 semester will begin the end of March. Please go to <https://www.isis.ufl.edu/index.html> then Registration Prep. You must verify your directory information every four months. This also will give you access to your holds, registration start time, degree audit (undergrads only), and adviser's contact information (undergrads only). Catalog of classes will be available on ISIS starting March 2, 2012. Please see MSE advising office in Rhines 108 to resolve advising holds.

Member Spotlight: Diego Garcia

Name: Diego Garcia

Home town: Miami, FL

High school: School for Advanced Studies

Year: Senior



Q: Why did you choose nuclear engineering?

A: I chose nuclear engineering because I believe we have only seen the beginning of what nuclear technology can do, and I want to be at the forefront as this potential unravels.

Q: What are you presenting at the American Nuclear Society student conference?

A: I will be presenting the results of my research with Professor James Tulenko and Dr. Eric Steinfelds on a very promising design for a nuclear battery.

Q: How many ANS conferences have you been to? Have you enjoyed them?

A: This will be my third ANS conference. My favorite trip so far has been the Washington D.C. national conference last year; apart from meeting a multitude of great contacts, I also had a great time with the other nuclear students around the city.

Q: What are your plans after you graduate?

A: I plan to land a job in the industry for some time and then eventually go to law school. Ideally I would love to work at the Nuclear Energy Institute in Washington D.C.

Q: What was your favorite class in college?

A: My favorite class has been the nuclear safeguards lab with Professor Ping Neo. The trip to Oak Ridge National Lab in Tennessee was a fun and interesting experience.

Updates

Boy Scouts/Public Outreach: The committee is working on a preliminary plan for the Nuclear Science Merit Badge program. The goal is to present this to the department either this summer or next fall. Then finalize the plan for the first event in spring of 2013. If you are interested in joining this committee please contact Madison Martin at memartin@ufl.edu.

Social Media: Twitter and Facebook page have been created to update on UF ANS Student Sections events as well as news related to the nuclear industry. PLEASE FOLLOW!

Twitter: https://twitter.com/#!/UFL_ANS

Upcoming Dates and Events

Boy Scouts Committee Meeting	April 5 th , 2012 (3:30pm NSC Library)
ANS General Body Meeting	April 9 th , 2012 (3:30pm NSC 227)
	Student Section Officer Elections
ANS National Elections	March 12 – April 24, 2012
ANS Student Conference	April 12 – 15, 2012 (UNLV)

About ANS @ UF

The American Nuclear Society Student Chapter at the University of Florida is an organization of Nuclear and Radiological engineering students dedicated to the promotion of nuclear science and technology for the benefit of humanity. The chapter is instrumental in informing the public of everyday radiological applications in an attempt to alleviate the common misconception of "fear" when it comes to radiation.

Nuclear science and technology is integrated into our everyday lives in many ways. Not only does over 20% of our nation's electricity come from nuclear power, but last year over 12 million lifesaving radiological medical procedures were performed in this country alone. Irradiation can make food safer to eat and mail safer to open. Also many of the products we use in everyday life rely on nuclear techniques for quality control measurement and production. Even the white poinsettias we see during the holiday season have been produced via the irradiation of seeds.

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Questions? If you would like to join ANS or help with the newsletter, please contact Madison Martin, Secretary, at

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Twitter: https://twitter.com/#!/UFL_ANS

Facebook: <http://www.facebook.com/pages/UF-American-Nuclear-Society-Student-Section/243959355690743>