



Cascade Chapter



Avalanche

The official newsletter of the
Cascade Chapter of the Health Physics Society

Spring 2011 Issue

<http://www.hpschapters.org/cascade/>

Annual E. Dale Trout Meeting

This year's annual meeting will take place at the Vue in Corvallis, Oregon on May 13th. The Vue is an exciting new meeting venue in downtown Corvallis. (For more information on the Vue, check their website, www.vuecorvallis.com.) We have a number of speakers lined up for this year's annual meeting, with topics certain to be of interest to Cascade Chapter members and guests.

The keynote speaker for this year's meeting will be Health Physics Society President Elect, Kathy Pryor. Kathy earned a Master of Science in Radiological Sciences degree from the University of Washington in 1981 and a Bachelor of Science in Biology in 1979. Following graduation, Kathy was employed by Southern California Edison for five years as a Health Physics Engineer at the San Onofre Nuclear Generating Station and in the corporate office. She was the Radiation Safety Officer at the University of Southern California Health Sciences Campus for two years before relocating back to the Northwest and taking a position with Portland General Electric at the Trojan Nuclear Plant. Kathy worked in the Corporate Health Physics program and later, in the Plant's Radiation Protection organization as the Technical Support Supervisor.



In 1992, with the impending closure of the Trojan Nuclear Plant, Kathy moved to the Pacific Northwest National Laboratory in Richland, WA. Kathy is currently Chief Health Physicist in PNNL's Radiation Protection Division, with responsibility for regulatory analysis and senior technical support of the Radiation Protection program.

Kathy has been certified by the American Board of Health Physics since 1986. She served a five-year term as a member and officer of the ABHP, including the position of Chair in 2002. Kathy has been a member of the HPS since 1980 and is a member of the Columbia Chapter. She has served on the Health Physics Society Board of Directors as a Director and as Secretary prior to being elected to the position of President Elect. Kathy was also recently elected

to the National Council on Radiation Protection and Measurements, and has served on a number of NCRP and ANSI working groups.

Kathy and her husband Dale make their home in Richland with their three large dogs. They have three children; two in college and one pursuing his dream of being a rock star.

The title of Kathy Pryor's presentation is *Pit Disassembly and Conversion Project: Radiological Design Considerations*. The Pit Disassembly and Conversion Project is an important component of National Nuclear Security Administration's Plutonium Disposition strategy. The mission of the PDCP is to convert surplus nuclear weapons pits into plutonium oxide for use as feed to the Mixed Oxide Fuel Fabrication Facility. This one-of-a-kind facility presents a number of radiological design challenges. Kathy has been the Chief Radiological Engineer and Safety and Health Task Lead on the design project since 1999. She will discuss the PDCP processes, radiological design considerations and dose assessment activities accomplished to date on the project.

Student Presentations

Tristan Hay (Radiation Health Physics PhD Student) – *Impact of Radiopharmaceuticals in Municipal Wastewater*

NCRP report No.160 states, medical exposure constituted nearly half of the total radiation exposure of the US population from all sources in 2006 (NCRP 2009). Part of this increase in exposure is due to the rise in nuclear medicine procedures. With this observed growth in medical radionuclide usage there is an increase in the radionuclides being released into wastewater after the medical procedures. Often medical radionuclides are not exactly 100% radionuclide pure, but meet a certain standard of purity. Of particular interest are the longer lived impurities associated with these medical radionuclides. The longer lived impurities have a higher chance of reaching the environment. The goal of this study is to identify radionuclide impurities associated with some of the more common radiopharmaceuticals Tc-99m and I-131, locate

and quantify the levels of these impurities in municipal wastewater, and make a determination as to the potential long-term impact.

Elizabeth Houser (Radiation Health Physics PhD Student) – *Developing a Regulatory Framework for Radiation Dose to Non-Human Biota*

The United States lacks a robust regulatory framework for standards related to radiation dose to non-human biota. Those international frameworks that do exist are often poorly standardized and inconclusive in their scope and implications. This presentation will discuss the challenges that surround regulation of radiation dose to non-human biota, especially in the circumstances of deep geological repositories. Additionally, it will discuss the outcome of a recent workshop given by BIOPROTA, an international task-group seeking to establish a framework for evaluating and managing risks from radiation dose to non-human biota.

David Horn (Radiation Health Physics MS Student) – *Comparison of NCRP 49, 51 Shielding Guidelines for Linear Accelerators with Deterministic Computer Simulation*

Guidelines for the shielding around linear accelerator rooms in NCRP 49 and 51 are based on conservative assumptions designed to ease shielding design calculations, and because of these assumptions, errors can sometimes happen, necessitating expensive reconstruction after testing of the room is completed. The deterministic radiation transport code *Attila* from Transpire Inc. was used to calculate dose rates in and around a model linear accelerator room, in order to explore the option of using computer simulations to verify shielding designs before construction is started. A model room with shielding was designed by following the NCRP guidelines and then simulated with *Attila* to make the comparison. For the sake of simplicity in this first step project, the design and simulation was done assuming a 6 MV linear accelerator such that accounting for neutron production would not be necessary.

Vanessa Holfeltz (Radiation Health Physics MS Student) – *The Use of Biopolymers for the Adsorption of Radionuclides for Decontamination*

The removal of radioactive contaminants from materials, aqueous waste streams, and personnel is an important problem in radiation health physics. The use of biopolymers for the adsorption of radionuclides for the purpose of decontamination is attractive from standpoints of cost, availability, biodegradability, and biocompatibility. One biopolymer which can be used to adsorb radioactive metal cations is chitosan. Chitosan is produced from chitin, which is the second most abundant biopolymer in nature. The sorption abilities for chitosan with various radionuclides

has been investigated by batch sorption experiments. The uptake of radionuclides by chitosan has been found to be dependent on pH and physical form of chitosan, as well as the ratio of radionuclide to chitosan.

Corrie Black (Radiation Health Physics MS Student) – *Development of Fast Radiochemical Separation Methods for Environmental Monitoring and Nuclear Forensics*

Alternative organic extractants capable of separating lanthanides from actinides have been under investigation. One class, diamide derivatives of dipicolinic acid, have been found effective in solvent extraction processes. Using these extractants in rapid radioanalytical methods such as solid phase extraction and chromatography is currently being investigated. Chromatography offers advantages over solvent extraction in that it is capable of achieving higher separations in a single step and is contained in a single unit. Separation of lanthanides and actinides is a challenging problem; however, its solution will benefit a variety of radiochemical processes within environmental analysis, nuclear energy, and medicine.

Japan Nuclear Accident Update

We have been closely following efforts to limit the release of radioactivity and gain control of the damaged nuclear power plants in Japan. From both a human and environmental perspective, this is the worst nuclear power plant accident since Chernobyl in 1986. To bring us up to date on the disaster, we will have Michael Grissom, CDR, MSC, USN (Ret.) joining us at the annual meeting to give an updated version of a presentation he recently gave to the Health Physics Society Northern California Chapter on the reactor accident in Japan. Michael Grissom is President of MPG-HP, Inc., a Veteran-Owned Small Business specializing in Radiation Safety Program Reviews and Environmental, Safety and Health Staff Assessments. Mr. Grissom's experience in nuclear power plant accident response gives him a unique perspective on the unfolding events in Japan. In September 1979 and April 1980, Mr. Grissom was a consultant to Porter-Gertz at Three Mile Island (TMI), Middletown, PA during the post-accident recovery effort as a member of the TMI Unit 2 Recovery Team, Effluent and Dose Assessment Group. In this capacity, Mr. Grissom evaluated the August 1979 worker beta-dose overexposures issue, coordinated preparation of a calibration source using TMI Unit 2 primary coolant water by the Babcock and Wilcox Chemistry staff at Blacksburg, VA, and did plant worker exposure mock-up analyses to reconstruct the exposure scenario.

The title of Michael Grissom's presentation is *An Update on the Japanese Radiological Event at Fukushima Plant 1 (Daiichi)*. The presentation will cover the following points:

- Setting the scene: The Tohoku Earthquake, subsequent tsunamis and weather (headwinds to recovery)
- Japanese Nuclear Power facilities, Daiichi NPGS and BWR basics (aged but functional facilities)
- Sequence of events at the Fukushima Daiichi NPGS (emphasis 1st 2 weeks)
- General features of the radiological events (such as environmental measurements)

Member Emeritus membership. You can pay your dues together with your meeting registration at the May 13 chapter meeting, or mail a check payable to CCHPS to the chapter secretary at the address shown below. More information about the different membership categories and the benefits of each type of membership can be found on the [CCHPS website](http://www.cchps.org).

Chapter News and Announcements

News from the Community Relations Committee

The Cascade Chapter is actively engaged in K-12 education, providing health physics demonstrations for teachers, children and the community. Norm Dyer and Marjorie Slauson represented the chapter at the Salem-Keizer School District Science Expo held at Willamette University on April 20. Labeled as the “First Annual Darwin Days”, the expo showcased K-12 and Willamette University student research projects as well as demonstrations of the work of several scientific agencies and community groups such as NASA, the USGS, Turtle Ridge Wildlife Rehabilitation Center and the Oregon Coast Aquarium. Teachers, parents, and students attended the event and most were very interested in the demonstration of radioactive household goods and using a geiger counter to search for the radioactive items on display. Several of the attendees asked about programs and careers in health physics. It was interesting to note that there were very few comments on the Fukushima Dai-ichi poster board that was made especially for the event in anticipation of this being the hot topic for health physics. “All in all it was a fun event and really great to be able to show the Salem Community what our profession is all about” said Slauson.

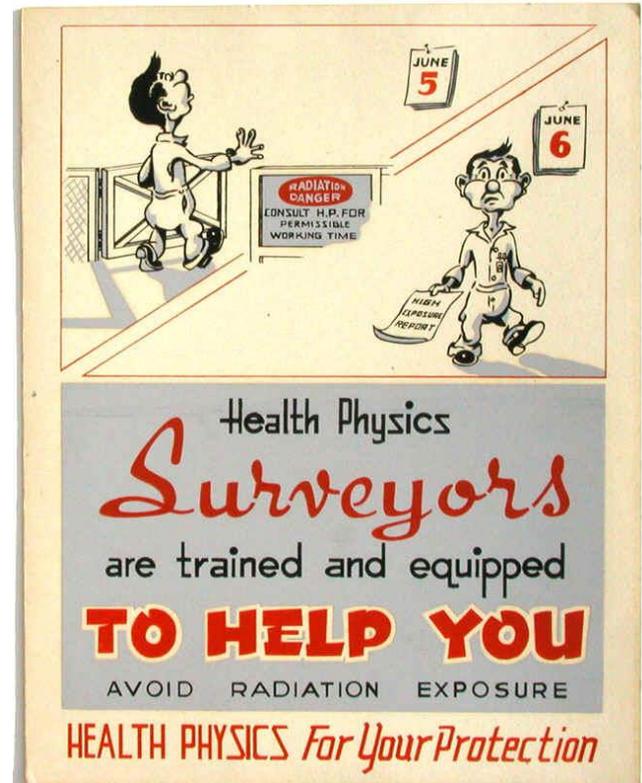
(Editor’s Note: If you are interested in working with the Chapter’s Community Relations Committee on programs and events like this, contact the chapter secretary.)

2011 Elections

Ballots will be sent out soon for electing Chapter Officers for 2011. The Nominating Committee has worked hard and put together an excellent slate of candidates for the open positions. Nominees are: Charles Croft (Health Physicist with The Boeing Company) for President Elect, John Gough (RSO, Swedish Medical Center in Seattle) for Treasurer, and Norm Dyer for Member at Large. Chapter members, watch for your ballot coming soon to your e-mail inbox. Ballots will be counted and the new officers announced during the May 13th meeting.

2011 Chapter Dues

If you haven’t paid your chapter membership dues for 2011 yet, we are still accepting payment. Dues for 2011 remain the same as last year: \$25 for Plenary membership, \$20 per person for Group membership, and \$12.50 for Student and



<http://www.orau.org/ptp/collection/hpposters/hppostersurveyors.htm>

Cascade Chapter Officers:

President:	Julia Sober
President-Elect:	John Pickering
Secretary:	Carl Bergsagel
Treasurer:	Mike Zittle
Member-at-Large:	Marge Slauson

Secretary Contact Info:

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2011 Annual E. Dale Trout Meeting

The 2011 Cascade Chapter HPS Annual E. Dale Trout Meeting will be held **Friday May 13, 2011** at the Vue, 517 SW 2nd St. Corvallis, Oregon (located downtown Corvallis on the 5th and 6th floors of the Elements Building).

Agenda

- 8:45 Executive Committee Meeting
- 9:00 Breakfast sponsored by Seltech
- 9:00 - 9:30 Registration
- 9:30 Ballot Closed
- 9:30 Chapter Business Meeting
 - Treasurer's Report
 - Committee Reports
 - Old Business
 - New Business
- 10:00 Presentation – Kathy Pryor, CHP, HPS President Elect, *Pit Disassembly and Conversion Project: Radiological Design Considerations*
- 11:00 Student Presentations
- 12:00 Lunch
- 12:45 Student Presentations
 - 2:15 Break sponsored by Mirion Technologies
 - 2:30 Presentation – Michael Grissom, *An Update on the Japanese Radiological Event at Fukushima Plant 1 (Daiichi)*
 - 3:30 Meeting Adjourned
 - 3:30 - 4:30 No-Host Bar Happy Hour with entertainment provided by Mike Zittle's jazz trio, *Tonic*

Be sure to stay for the Happy Hour after the meeting to visit with your fellow chapter members and guests and hear some great jazz.

A special thank you to Seltech for sponsoring the breakfast and to Mirion Technologies for sponsoring the afternoon break. Please visit their booths at the meeting.

Cost

Prices for the meeting are:

	<u>Meeting Only</u>	<u>Lunch & Meeting</u>
Member	\$10	\$25
Group Member	Free	\$15
Non-member	\$15	\$30

Food Menu

Breakfast

Continental Breakfast Buffet including a fresh fruit tray with coffee, orange juice, and water service.

Assorted coffee cakes, fresh baked danish, muffins, pecan streusel cake, and blackberry streusel

Lunch

Taco Bar

Features spicy ground beef or chicken, taco shells, cheese, onions, lettuce, tomato, olives and salsa.

Coffee, tea, assorted beverages.

Dessert

Afternoon Break

Bite size brownies, a fresh fruit platter, and assorted cold beverages

Registration

Please send your meeting registration to the chapter secretary as soon as possible, and no later than May 9th. Please indicate on your meeting registration if you want lunch or not. You can register for the meeting by sending an e-mail message to: cascadechapterhps@gmail.com

Parking

Parking is available in the lot to the South of the building.

Directions to the Meeting

From North or South on I-5:

- Take I-5 Exit # 228 for Oregon Highway 34.
- Drive WEST on Highway 34 10.2 mi. to downtown Corvallis (across the Willamette River Bridge). You will be on NW Harrison Blvd.
- Turn LEFT (SOUTH) onto NW 4th St/US-20 W/OR-34 W/OR-99W S/Pacific Hwy W. (NW 4th St is just past NW 3rd St.)
- Drive SOUTH on NW 4th St. 0.5 miles and turn LEFT onto SW Washington Ave. (SW Washington Ave. is just past SW Adams Ave.)
- Turn RIGHT onto SW 2nd St.
- The Vue is on the left at 517 SW 2nd St., Corvallis.

[Click here for a map.](#)

Lodging

Staying overnight in Corvallis when you come to the meeting? The Hilton Garden Inn on the Oregon State University campus has discounted rooms available. Call the hotel directly at 541-752-5000 and ask for the OSU rate.