

News Release: RADIATION, NANOTECHNOLOGY, HEALTHCARE, AND MORE

Highlights of the Health Physics Society Meeting in Pittsburgh, July 14-17.

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****FOR IMMEDIATE RELEASE ****

McLean, VA, July 9, 2008 – Scientists at a meeting of the Health Physics Society (HPS) in Pittsburgh next week will discuss some of the most important questions about radiation safety including how best to assess radiation doses from CT scans and responses to radiation emergencies – when to take shelter, for instance, and how to best assess the at-risk public's potential exposure. Other topics include improving the use of macromolecules in cancer therapy and the impact of nanotechnology on healthcare, electrical generation, food production, and information management.

The HPS 2008 Annual Meeting of the Health Physics Society (HPS), which will take place July 14-17, 2008 in Pittsburgh, PA at the David Lawrence Convention Center. Approximately 900 attendees are expected, with nearly 260 presentations throughout the four days. Information about all of the presentations can be found at http://hps.org/documents/53_preliminary_program.pdf

This news release highlights some of the noteworthy talks and sessions at the meeting:

Plenary Session (Monday, July 14, beginning at 8:10 a.m.)

With a focus on the use of radiation in imaging medicine, Drs. Tuttle (Memorial Sloan-Kettering), Vetter (Mayo Clinic), Brenner (Columbia University), and Zanzonico (Memorial Sloan-Kettering) will present information on the various uses of radiation in medicine, how to communicate risk (benefit) to the patient, risks of CT scans, and benefits of imaging procedures.

Recovering and Tracking Radioactive Sources

Continuing the discussions from previous Health Physics Society meetings, we look again at what is being done to prevent radioactive sources from getting into the public domain and, for sources that do, how we can recover them. On Monday afternoon, Carolyn Mac Kenzie (Carolyn.mackenzie@hq.doe.gov) discusses ongoing efforts of the US DOE NNSA Global Threat Reduction office to assist developing nations to maintain control of their radioactive sources. (Monday, 3:00 p.m.)

Tuesday afternoon, Eric Reber (eric_reber@yahoo.com) talks about the International Atomic Energy Agency's historical work to identify and recover lost sources and their development of a document that provides guidance on how to assess the national situation, and how to develop and implement a national strategy. (Tuesday, 4:45 p.m.)

How Prepared are We for an Emergency Response?

Knowing the steps to take and the prioritization of those steps is a key to proper treatment of people involved in a radiation accident. A new software application being developed by the Armed Forces Radiobiology Research Institute (with collaborators at the Radiation Emergency Assistance Center, REAC/TS) will be the topic of a presentation Tuesday at 2:30 p.m. by Dr. William Blakely (blakely@afri.usuhs.mil). With minimal data entry, the program will determine the level of radiation exposure and treatment steps. This type of life-saving

information can be used on personal communication devices such as PDAs so usage can be in nearly any environment.

Additionally, in a special session running all day Wednesday, July 16, and continuing into Thursday morning, scientists will share lessons learned during previous emergency response incidents. They will also present models predicting future event responses.

- Evacuation or shelter-in-place (Wednesday, 8:45 a.m.)
- Effectively using measures to mitigate the health effects of radiation exposure (Thursday, 8:45 a.m.)
- Current capabilities versus what may be needed in a response effort (Wednesday, 9:45 a.m.)
- Protection of life and property after a radiological dispersal device is activated (Wednesday, 11:45 a.m.)

Radiation Exposure during Pregnancy

Of great interest over recent years is the radiation dose a conceptus might receive during medical exams. A presentation at 11:15 a.m. Tuesday morning will highlight work that a group from Rensselaer Polytechnic Institute (Dr. G.X. Xu, xug2@rpi.edu) has undertaken of CT fetal dose assessment: “A patient receives more radiation from a CT exam than any other types of radiological exams. Among various patient groups, twice as many pregnant women today are being exposed to CT procedures compared to ten years ago. Though not a routine procedure used during pregnancies, a CT exam helps to detect possible life-threatening conditions such as bleeding in the brain, blood clots in the lungs or appendicitis. To accurately assess the dose to mother and the fetus from CT exams, we developed a virtual CT scanner and used the previously developed pregnant female models representing 3-, 6-, and 9-month gestational periods to evaluate the fetal doses. The organ dose data that can be generated can be used to assess the risk to the fetus and the mother, thus allowing better communication between the patient and physicians.”

Other Highlights

- The International Atomic Energy Agency new technical document regarding the protection of pregnant workers (Monday, 5:00 p.m.)
- Results of a new study to determine fetal doses from CT imaging exams (Wednesday, 8:45 a.m.)
- NIH develops a new plan that offers additional safeguards for radiation workers and their families (Thursday 9:15 a.m.).

Nanotechnology

- Monitoring and measuring nanoparticles (Wednesday, 4:00 p.m.)
- The National Institute for Occupational Safety and Health safety plan for working with nanoparticles (Wednesday, 4:15 p.m.)
- Potential use of nanoparticles as radiopharmaceuticals (Wednesday, 4:30 p.m.)
- Panel discussion on nanotechnology begins at 4:45 p.m. on Wednesday.

Other Meeting Highlights

- TREATING CANCER WITH MOLECULES AND LIGHT — A team at the University of Nevada, Las Vegas, led by Dr. S.J. Madsen (steen.madsen@unlv.edu) has developed a new technology to improve the utilization of therapeutic macromolecules in cancer therapy in a site-specific manner. Called photochemical internalization, light is used to excite target cells containing photosensitizers and the macromolecules. This was found to be effective at low light irradiances in malignant brain gliomas. Wednesday 10:30 a.m.
- TRITIUM IN OFFICE REFRIGERATORS — Dr. Jason Harris, jastharris@aol.com, discusses an investigation initiated to study the tritium accumulation in frost and ice buildup in refrigerators and freezers. Results of the investigation showed that tritium from office building humidity can accumulate as frost on the freezer units in small office refrigerators. Frost-free refrigerators were found to not have this problem. No tritium was detected in food or beverages stored in the refrigerators. Tuesday 9:00 a.m.
- KNOW THE DOSE, KNOW THE TREATMENT — The Armed Forces Radiobiology Research Institute has developed software that, with a minimal amount patient data, will output estimated radiation dose and

treatment approach information for each specific patient. This presentation will be given by Dr. William Blakely, blakely@afri.usuhs.mil. Tuesday 2:30 p.m.

- RADIUM AND PENNSYLVANIA — During a special series of presentations about at Pennsylvania’s radiological history, Dr. Joel Lubenau, j11016441@dejazzd.com, will talk about Marie Curie’s visit to the United States in 1921 and her “gift” of one gram of radium from the Women of America (presented by President Harding) (Wednesday 9:30 a.m.). The series of presentations will conclude with four special movie showings beginning at 2:30 p.m. on the radium industry. These include “Radium,” “The Rarest Substance Known – Radium,” “Mining for Radium,” and “The Newest Light on Earth.”

ABOUT THE HEALTH PHYSICS SOCIETY

The Health Physics Society consists of approximately 5,500 radiation safety professionals whose activities include ensuring safe and beneficial uses of radiation and radioactive materials, assisting in the development of standards and regulations, and communicating radiation safety information.

The Society is a nonprofit organization formed in 1956. Its primary mission is excellence in the science and practice of radiation safety. The Society has members in approximately 70 countries, and has established nearly 50 chapters and 10 student branches. Visit www.hps.org for more information.

Health physicists promote the practice of radiation safety. They work in occupational environments such as universities, local hospitals, manufacturing, and nuclear power plants as well as in environmental areas such as radioactive waste sites. They are involved in understanding, evaluating, and controlling radiation's potential risks relative to its benefits in applications such as fighting disease, supplying energy, and increasing security.

Reporters who would like to attend the meeting or who need assistance contacting the presenters should contact HPS Media Liaison Kelly Classic at 507-254-8444 during the meeting or 507-284-4407 prior to July 12.