



Trinity Section
American Nuclear Society
P. O. Box 5367, Albuquerque, NM 87185
<http://local.ans.org/trinity/>

Rio Grande Chapter
Health Physics Society
New Mexico
<http://hpschapters.org/riogrande/>



JOINT DINNER MEETING ANNOUNCEMENT

“Impact of Nuclear Medicine on Emergency Response” (a two-part presentation)

Speakers: Dr. Eva Birnbaum and Dr. David Mercer, LANL

Introduction: A number of novel isotopes and associated drug compounds are being developed, both in the US and elsewhere, for diagnosis and therapy in the field of nuclear medicine. The accelerator at Los Alamos is one of the locations producing such products. Because not all countries address clinical use approvals in the same way and in the same timeframe, medical tourism has become more common for seeking out the latest regimens where they have been approved for clinical use. Such activity can have unintended and potentially disruptive consequences, since patients returning to the US after such nuclear medicine regimens in another country can set off portal monitors and other detectors in the homeland security arena. Some of these therapeutic isotopes can initially appear to be items of security concern before the US Radiological Triage Program makes an assessment. We will hear from both the production side and the security screening side in this evening's two presentations.

Abstracts: Please see next page.

Biographies: Please see next page.

Place: **Courtyard by Marriott, Santa Fe**

3347 Cerrillos Road, Santa Fe, NM (505-473-2800)

Directions: From Albuquerque, take I-25 North approximately 55 miles to Exit 278 (Cerrillos Road). Hotel is 3 miles from exit on the left-hand side of Cerrillos Road at Richards Avenue.

Date: **February 26, 2016**

Time: **6:00** Social Hour with Cash Bar

7:00 Buffet (with southwest tilapia and chicken with green chile and piñon)

7:45 Speakers

Cost: *\$35 per person (by web sign-up in advance);*

\$40 per person (not pre-paid, at the door);

\$15 for students and children

We strongly encourage you to sign up and pay for this event using our PayPal payment account. Visit the “Calendar” page of our web site (<http://local.ans.org/trinity/calendar.html>) and select the appropriate payment button. You may use your own credit card and do NOT need to have a PayPal account to make the payment.

RSVP: If you do not use PayPal payment, please RSVP no later than Feb 22nd to:
Markku Koskelo: mkoskelo@aquilagroup.com (505-338-8083) or
Kimberly Klain: kclark@lanl.gov (505-665-1349)

RSVP must be received by 22 Feb in order to give final numbers to the caterers. While we strongly encourage everyone to use online payment to sign up and prepay, an RSVP is a commitment to attend/pay at the door. We cannot afford “no shows” after the final count is given to the caterers, as the Section is partially subsidizing the cost of this event. If you cancel after 22 Feb, you will still be responsible for paying.

Isotope Production for Nuclear Medicine

Eva Birnbaum, PhD,
Program Manager, Isotope Production and Distribution Program,
Science Program Office, LANL

Abstract: The Los Alamos Isotope Program uses the proton beam at Los Alamos National Laboratory's LANSCE accelerator to produce radioisotopes needed by the nation. The main isotopes produced at the Isotope Production Facility will be discussed along with other major production methods in the US. An overview will be given of some of the primary applications in nuclear medicine. In addition, the development process for novel isotopes for future applications will be described, including current research into alpha emitters for targeted alpha therapy, including actinium-225.

Biography: Dr. Birnbaum earned a Bachelor's degree in Chemistry and a Concentration in Technology and Policy Studies from Carleton College in Minnesota, followed by a PhD in Inorganic Chemistry from Caltech in Pasadena, California. She came to the laboratory as a postdoctoral fellow to work in the areas of environmental remediation and catalysis, and became a staff member in 1998. She worked as a team leader in the trace metals analytical group as well as for the Materials Control Project investigating and mitigating contamination spread from hydrotest experiments at the firing sites. After a short entrepreneurial leave, she returned to LANL's Isotope Program in 2010. The Isotope Program uses the LANSCE accelerator to produce radionuclides to meet the nation's needs for applications in medicine, industry, and R&D. As part of her interest in medical applications of radioisotopes, Dr. Birnbaum is also the Principal Investigator on an LDRD project exploring the fundamental chemical properties of actinium, an isotope of great interest for the treatment of cancer.

Radiological Triage Program

Dr. David Mercer, Chemistry Division,
Physical Chemistry and Applied Spectroscopy Group, LANL

Abstract: Many first response teams and border crossings are equipped with radiation detection hardware; this results in a large number of alarms that require adjudication. While the monitoring programs are principally intended to identify and interrupt clandestine transport of radioactive materials, nuclear medicines can cause innocent alarms. Most alarms are resolved quickly, but trickier cases are forwarded to the US Radiological Triage Program. On-call analysts at Los Alamos, Lawrence Livermore, and Sandia National Laboratories determine quickly whether a threat might be indicated, and strive to minimize the impact on innocent people and commercial carriers. New isotope products in the nuclear medicine arena cause some of the most interesting and challenging alarms. Dr. Mercer will discuss some of these cases that have been encountered and some of the lessons learned.

Biography: Dr. David Mercer graduated from the University of Colorado in 1992 with a degree in Physics. His thesis project also used the LANSCE accelerator, not to make isotopes, but for basic physics studies. After a postdoc at Michigan State University, he came to work at Los Alamos National Laboratory, where he is a Scientist in the Chemistry Division, Physical Chemistry and Applied Spectroscopy Group. He has worked for the past 15 years in the nuclear emergency response programs, and is the Skill Set Manager for the US Department of Energy Radiological Triage Program.