

# SNM Mid-Winter Meeting: Cardiovascular, Molecular, and Hybrid Innovations

The program for the SNM 2006 Mid-Winter Educational Symposium, to be held February 11 and 12 at the Wyndham Buttes Hotel in Tempe, AZ, was published in late September. This symposium will explore new directions for 3 of the most vibrant aspects of nuclear medicine: cardiovascular applications, molecular imaging, and hybrid imaging. The program will include basic science aspects of these fields and their utility in routine clinical practice. The meeting is designed for nuclear medicine physicians, radiologists, cardiologists, pharmacists, technologists, and other nuclear medicine professionals who are involved in or interested in current

and emerging technical and clinical applications of nuclear medicine.

At this meeting, attendees will be eligible for up to 14.25 continuing education or continuing pharmacy education credits or up to 14.25 hours of continuing education credits for technologists through the Verification of Involvement in Continuing Education program. The SNM is applying to the Commission on Accreditation of Medical Physics Education Programs in an effort to offer Medical Physics Continuing Education Credit to physicists attending the meeting.

More information about the meeting, program, continuing education, and registration is available at: [www.snm.org.nmw](http://www.snm.org.nmw).

## 2006 SNM Mid-Winter Symposium Program

### Clinical Implementation of Advanced Image Processing and Reconstruction Algorithms February 11

10:00 AM–1:00 PM

Organizer/Moderator: Mark T. Madsen, PhD

Co-Moderator: James Halama, PhD

This session is designed for clinicians, technologists, and scientists interested in the state of the art in clinical image processing. Presentations will summarize advanced image reconstruction and image processing routines that are commercially available. Included in the presentations will be discussions on the foundation of these algorithms, the range of applications, and their projected effects on the future of nuclear medicine imaging. A basic understanding of clinical nuclear medicine imaging is desirable. Topics will include: Flash 3D, CT Attenuation Compensation, and Scatter Correction; Wide Beam Reconstruction Method for Shortening Scan Time of Gated Cardiac SPECT Perfusion Studies: A Preliminary Clinical Evaluation; Evolution: A Framework for Advanced SPECT Reconstruction with Compensation for Image Degrading Fac-

tors; and Fast, High-Quality Cardiac SPECT Using Astonish Reconstruction.

### SPECT/CT: Instrumentation and Clinical Applications February 12

10:00 AM–1:00 PM

Organizer/Moderator: Mark T. Madsen, PhD

Co-Moderator: James Halama, PhD

This session is designed for clinicians, technologists, and scientists interested in the state of the art in combined SPECT and CT systems. Presentations will summarize SPECT/CT instruments that are commercially available. Included will be discussions on instrumentation, applications for SPECT/CT systems, and projected effects of SPECT/CT on the future of nuclear medicine imaging. A basic understanding of clinical nuclear medicine imaging is desirable. Topics will include: Initial Clinical Experience with Siemens Symbia SPECT/CT; Specifications and Applications of an Integrated SPECT/Low Output CT System: The GE Hawkeye; and Initial Clinical Experience with the Philips Precedence SPECT/CT System.

**Monitoring Treatment Response with PET****February 11****10:00 AM–1:00 PM****February 12****10:00 AM–1:00 PM**

Organizers and Moderators: Alan H. Maurer, MD, and Alexander J. McEwan, MD

Organized by the SNM PET Center of Excellence and the Nuclear Oncology Diagnosis and Therapy Council

This seminar is designed for clinicians and technologists wishing to gain knowledge and experience in the application of metabolic/molecular oncologic imaging in assessing tumor response to therapy. Participants will be expected to have a basic background in the use of CT and PET imaging for diagnosis and staging of cancer. The current use of anatomic-based criteria (CT tumor and nodal size) will be contrasted with FDG PET/CT standardized uptake value (SUV) measurements. Technical problems associated with both anatomic and metabolic studies will be described. Case examples will be presented to illustrate theoretical and practical aspects of the typical clinical problems associated with assessing tumor response to therapy for a variety of malignancies. Topics will include current work. February 11: Review of RECIST Criteria and PET Response to Therapy; Issues and Answers on PET SUVs for Monitoring Response to Therapy; Review of PET and Response to Therapy; and PET Response to Therapy: Case Reviews; and future applications. February 12: Receptor Imaging with PET: Clinical Management Potential; Beyond Fluorinated Radiopharmaceuticals: Potential Future Clinical Tracers; PET Imaging with Nucleosides; and Imaging Hypoxia: The Next Routine PET Method?

**Molecular Imaging: Development of Novel Probes****February 11****9:30 AM–1:00 PM****2:00–5:00 PM**

Organizers: Mathew L. Thakur, PhD, and Henry F. VanBrocklin, PhD

Moderator: Michael Welch, PhD

Organized by the SNM Molecular Imaging Center of Excellence and the Radiopharmaceutical Sciences Council

This seminar is designed to introduce basic cellular and molecular biology as it relates to molecular imaging, discuss identification of novel targets, and present strategies for development of molecular probes specific for given targets. The seminar will highlight fundamental principles of multimodality imaging and discuss next-generation equipment for imaging small animals. Leading investigators will also present recent developments in diagnosis of oncologic, neurologic, and cardiovascular diseases using novel molecular probes. The seminar is suitable for clinicians, basic scien-

tists, and technologists interested in advancing molecular imaging, keeping up to date with progress in the field, and looking ahead at future applications of molecular imaging in clinical practice. Part 1 topics will include: Introduction to Cell and Molecular Biology; Principles of Multimodality Molecular Imaging; Identification of Novel Targets for Molecular Imaging Probes; Novel Strategies for Development of New Molecular Imaging Probes; Cardiovascular Applications: Reporter Probes; Cardiovascular Applications: Imaging Atherosclerosis; and Cardiovascular Applications: Imaging of Vascular Remodeling. Part 2 topics will include: Next Generation Small Animal Imaging Instrumentation; New Molecular Imaging Agents for Oncology; New Developments: Alzheimer's Disease; and New Developments: Addiction.

**Radiotracer Imaging in Congestive Heart Failure****February 11****2:00–5:00 PM****6:00–9:00 PM**

Organizer: Albert J. Sinusas, MD

Moderators: Mark I. Travin, MD, and Albert J. Sinusas, MD

Co-Moderators: James A. Arrighi, MD, and Mehran M. Sadeghi, MD

Organized by the SNM Cardiovascular Council

The course will focus on basic and clinical issues related to cardiovascular imaging in congestive heart failure (CHF). This course is designed for nuclear medicine physicians, cardiologists, radiologists, technologists, and scientists involved in cardiovascular nuclear medicine. The first series of lectures will focus on clinical applications of imaging in CHF. The focus will be on radiotracer imaging, although the roles of MR and CT will also be discussed. The second series of lectures will focus on the role of molecular imaging in the evaluation and management of patients with CHF. Important radiochemistry issues related to imaging of stem cells and targeted imaging in CHF will be discussed. These lectures will include discussion of receptor imaging, as well as imaging of angiogenesis and matrix metalloproteinases. Each series of lectures will be followed by a panel discussion to allow attendees to ask questions. Part 1 will include: General Overview of CHF and Nuclear Imaging; MR Assessment of Viability; The Importance of Imaging Ventricular Synchrony: Suitability of Nuclear Methods; Distinguishing Ischemic from Nonischemic Cardiomyopathy: Role of Hybrid PET/CT; Imaging of MIBG; Outcomes in CHF: Role of Radiotracer Imaging; and a panel discussion of Radiotracer Imaging in CHF: Clinical Applications. Part 2 will include: Radiochemistry Relevant to Stem Cell Therapy and CHF; Imaging of Stem Cells; Imaging of Angiotensin Receptor; Imaging of MMP Activation; Imaging of Angiogenesis Post-MI; PET Imaging of Adrenergic Receptors; and a panel discussion of Radiotracer Imaging in CHF, Role of Molecular Imaging.

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Displaced students and faculty researchers from affected universities will be able to indicate their interest in being hosted by a grant recipient and complete their request for assistance forms online at the clearinghouse Web site at [www.orau.gov/doesrelief](http://www.orau.gov/doesrelief).

*Department of Energy  
Office of Science*

## NRC and Increased Controls

A press release issued by the Nuclear Regulatory Commission (NRC) on September 6 obliquely addressed changes in NRC controls over radioactive materials that were incorporated into the Energy Policy Act of 2005 and signed into law by President Bush in August. In full, the text of the press release read:

The Nuclear Regulatory Commission and the 33 Agreement States are coordinating efforts to increase the control of radioactive materials that could potentially be of use to terrorists. "We believe we have been successful in establishing an approach that achieves the common objective of the NRC and the Agreement States of enhancing controls over certain radioactive materials and enhancing the protection of public health and safety," NRC Chairman Nils J. Diaz said. "This approach will leverage federal and state resources most effectively to increase protection and accountability of these materials." Under the Atomic Energy Act, the NRC has signed agreements with 33 states, relinquishing to the states responsibility for regulating radioactive materials used in academia, industry and medicine. The Agreement States regulate approximately 17,000 materials licensees, of which an estimated 1,650 will be affected by the new

requirements. About 550 of the 5,000 NRC licensees in the remaining 17 states, the District of Columbia and Puerto Rico also will be affected. The NRC retains exclusive authority over nuclear power plants, fuel cycle facilities and research reactors; those licensees are not affected by this decision. Over approximately the next 90 days, affected NRC licensees will receive Orders from the agency spelling out increased controls for certain radioactive materials. Over the same period, individual Agreement States will issue their licensees legally binding requirements essentially identical to the NRC's Orders. Materials covered by these requirements will be consistent with the International Atomic Energy Agency's Code of Conduct for the Safety and Security of Radioactive Materials, which is the internationally recognized standard for categorizing and protecting radioactive materials.

*Department of Energy*

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## Clinical Nuclear Medicine Technology

**February 11**

**2:00–5:00 PM**

**February 12**

**8:00 AM–1:00 PM**

Organizer/Moderator: Kathy S. Thomas, MHA, CNMT

Co-Moderator: Frances L. Neagley, BS, CNMT

Organized by the SNM Technologist Section

This program is designed to enhance clinical knowledge and technical skills for technologists, physicians, scientists, and pharmacists interested in nuclear medicine technology and molecular imaging. A comprehensive discussion designed to enhance current knowledge and develop new technical skills in myocardial perfusion imaging will be presented. A fundamental understanding of PET/CT technology will be developed, including instrumentation, patient protocols, radiation safety, and the clinical application of the fused technology. Finally, the nuclear medicine practitioner (NMP) designation will be discussed, including the proposed scope of practice and clinical application of the NMP in a variety of clinical settings. Part 1 topics will include: Truly Understanding MPI: Not Just Pushing the Buttons; Myocardial Perfusion: Moving from SPECT to PET; and Advanced Practice: A New Career Ladder in Nuclear Medicine Technology. Part 2 will include Instrumentation in PET/CT; Radiation Safety and Patient Protocols in PET/CT;

PET Applications in Radiation Therapy Planning and Assessing Treatment Response;  $^{90}\text{Y}$  Radioembolization for the Treatment of Hepatocellular Carcinoma and Metastatic Disease to the Liver; and  $^{67}\text{Ga}$ : Tried and True.

## Translational Applications of Molecular Imaging and Radionuclide Therapy

**February 12**

**8:30 AM–3:45 PM**

Organizer/Moderator: William C. Eckelman, PhD

Organized by the Society of Radiopharmaceutical Sciences (SRS), the Radiopharmaceutical Sciences Council (RPSC), and the Molecular Imaging Center of Excellence

In this educational workshop, the RPSC has joined with the SRS to present a series of lectures to educate pre- and postdoctoral radiopharmaceutical scientists in the design of molecular probes. A program of student bursaries will be announced in the near future. Topics will include: New Generation of Radiotracers; Reporter Gene Studies with Nuclear and Optical Tracers; The Impact of a Diagnostic Scan on Therapy Selection; Mass Effects in SPECT, PET, and Optical Imaging; Monitoring Up-Regulated Integrin Receptors with Nuclear and Optical Probes; True Tracers: Comparing FDG and Glucose with FLT and Thymidine; Radiolabeled Antibodies in the Clinic: Individualized Therapy; Radiolabeled Peptides for Diagnosis and Therapy; and Unique Applications of Alpha Therapy. ❄