

Nuclear Medicine in Focus at RSNA 2005

The 2005 meeting of the Radiological Society of North America (RSNA), held November 27–December 2 in Chicago, IL, offered more nuclear medicine content than ever before, according to meeting organizers and attendees from the SNM. In this megameeting, attended by more than 50,000 of their diagnostic imaging and radiation oncology colleagues and affiliates from around the world, nuclear medicine professionals participated in plenary sessions, educational seminars, scientific presentations, poster displays, demonstrations of new technology, continuing education initiatives, and special sessions.

One thematic focus of the meeting, outlined by RSNA President David H. Hussey, MD, in his welcoming oration, was the need for closer cooperation between diagnostic imaging and therapeutic specialists, especially radiation oncologists. “It is clear to me that medicine is more effective when physicians from different specialties interact and work toward the goals of faster and more accurate diagnosis, better treatment, and periodic assessment of treatment outcome,” he said. He pointed to PET and other molecular imaging technologies as innovations that will make such collaborations essential as tailored patient treatments become routine elements in cancer care.

Highlights of SNM 2005 Featured at RSNA

SNM was one of 5 specialty imaging societies asked by RSNA to present invited papers in a special-session format. The other societies were the Society of Interventional Radiology, American Society for Therapeutic and Radiation Oncology, American Society of Neuroradiology, and International Society for Magnetic Resonance in Medicine. The SNM session was presented on Wednesday, November 30, and included highlights from the cardiovascular, oncology therapy and imaging, and nuclear imaging instrumentation presentations at the SNM 2005 meeting in Toronto. Joseph Machac, MD, summarized the cardiovascular presentations, including highlights in gene expression imaging, marrow stem cell implantation imaging and monitoring, measurement of myocardial blood flow and reserve, and assessment of coronary vasomotor function in patients with obesity and cardiovascular risk factors. Lale Kostakoglu, MD, reviewed oncology therapy and imaging studies, with special attention to cancer therapy with radiolabeled molecules and targeted molecules and to applications of PET in evaluating and predicting response to therapy (particularly in gynecologic malignancies). Stephen Bacharach, PhD, presented selected summaries of papers on nuclear



C. Douglas Maynard, MD

RSNA Awards Gold Medal to C. Douglas Maynard, MD, SNM Past President

The Radiological Society of North America (RSNA) awarded its highest honor, the Gold Medal, to SNM Past President C. Douglas Maynard, MD, on November 29 at the society's annual meeting in Chicago, IL. Edmund A. Franken Jr., MD, and H. Rodney Withers, MD, DSc, were also honored.

Gold Medals are presented each year to individuals who have rendered exemplary service to the science of radiology and who have received unanimous approval by the RSNA Board of Directors—a tradition originated in 1919.

Maynard served as president of SNM for the 1978–1979 term and is now an emeritus member of SNM. He was honored by RSNA as a “physician and scholar whose influence has been a driving force in the field of radiology for the past 50 years.”

“Dr. Maynard's high level of integrity sets a goal for all those with whom he is associated,” said RSNA President David H. Hussey, MD. “He has significantly influenced the practice of radiology in this country. He has always demonstrated vision, insight and ingenuity within and outside of RSNA. Dr. Maynard has generated an amazing number of great ideas within our specialty, and he is an inspiration to all who know him.”

“Many of the accomplishments for which I am being recognized are the result of collaborative work with other individuals,” Maynard said. “To have been associated with so many other volunteers in this fantastic endeavor has been one of the most enjoyable aspects of my radiology career.”

Maynard was instrumental in the creation of the National Institute of Biomedical Imaging and Bioengineering and helped create the combined graduate biomedical engineering program between the Wake Forest University School of Medicine and the Virginia Tech School of Engineering.

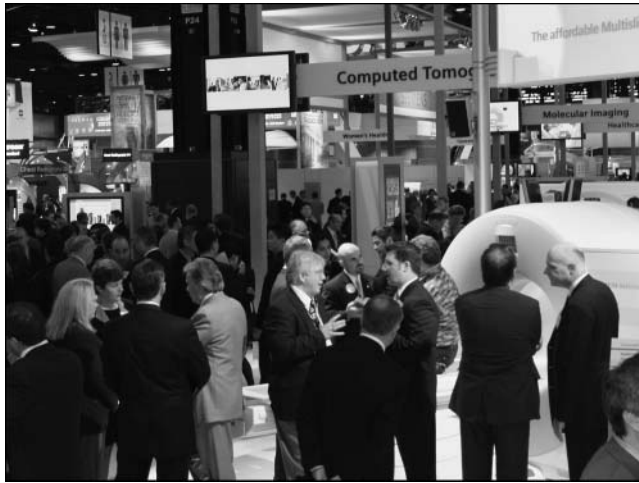


Photo courtesy of the Radiological Society of North America.

The 2005 Radiological Society of North America meeting featured more than 2,000 research presentations and posters covering 16 subspecialties, more than 1,200 education exhibits, and almost 300 refresher courses. The main events, as always, were the packed exhibit halls in the buildings that make up the McCormick Center complex on the Lake Michigan shore. Nuclear medicine manufacturers rolled out several new technologies, but much of the interest at the meeting focused on new functionalities and additions to previously introduced imaging models.

imaging instrumentation and covered new developments within the past year, including ultra-high-resolution small animal SPECT imaging devices (based on both conventional crystal technology and new crystal designs), novel crystals and instrumentation for PET (human and animal), comparisons of 2D and 3D PET imaging modes from both physics and tumor detection perspectives, intraoperative probes and other special-purpose PET imaging devices, special insert designs to convert standard PET scanners into high-resolution small-field scanners, and hybrid PET/MR imaging devices.

Nuclear Medicine a Focus from the Podium

Nuclear medicine techniques proved to be a pivotal element in a number of plenary sessions and annual orations at the RSNA meeting—including a few in which attendees might not have expected to find PET or SPECT as foci. On the afternoon of November 30, K.S. Clifford Chao, MD, delivered the Annual Oration in Radiation Oncology. The topic of his talk was “Integration of Functional Images into Future Radiation Oncology Research and Practice,” echoing the call for closer teamwork between disciplines outlined in Hussey’s opening session speech. Chao summarized the technologic revolution that has transformed image-guided radiation therapy over the past decade and noted that the new imaging technologies have been major contributors in a shift in the radiation treatment planning paradigm to a more biologic and molecular approach.

This year’s RSNA/American Association of Physicists in Medicine Symposium, held on December 1, offered panel perspectives on “Molecular Imaging: The Expanding Role of Clinical PET.” Members of the panel were Andrew Maidment, PhD, Paul Kinahan, PhD, and Richard Wahl, MD. They reviewed the technology of PET systems and the broad clinical value of PET at the molecular level for evaluation and staging of cancer, verification of treatment response, diagnosis of infection, and other clinical applications.

A plenary session on cardiac hybrid imaging, also on December 1, posed the question, “What’s Next?” Panel members Jack Ziffer, MD, Daniel Berman, MD, and Marcelo Di Carli, MD, discussed new applications of hybrid cardiac imaging and innovative approaches to hybrid and sequential imaging in the evaluation of patients with suspected or known coronary artery disease.

A point/counterpoint session on controversial issues in neuroradiology, part of the Interventional Oncology Symposium offered on November 30, covered current hot-topic issues in several modalities. Among these was a comparison of the relative merits of PET/CT and CT alone in the evaluation of the postoperative and previously irradiated neck. Robert Quencer, MD, and Mauricio Castillo, MD, moderated.

In delivering the 2005 Eugene P. Pendergrass New Horizons Lecture on November 28, Lawrence H. Schwartz, MD, outlined the ways in which imaging technologies are revolutionizing the process of drug discovery and development. He dubbed the role of imaging as “disruptive technology,” causing a reshaping of the traditional development process. “In the past, when you tested a drug, you looked for the endpoint, which frequently in oncology would be survival,” he said. “So you’d basically give two different drugs, and you would see in aggregate which group of patients taking which drug lived longer.” He noted that with imaging—including PET, SPECT, and other functional modalities—researchers can now look for better surrogates and biomarkers, speeding the process by identifying the effectiveness of therapies at the molecular level even before applications in humans.

Nuclear medicine played a starring role in numerous scientific presentations and refresher courses. On November 30, for example, Ronald Van Heertum, MD, and Satoshi Minoshima, MD, PhD, hosted a well-attended refresher course on current and emerging applications for PET and SPECT in brain disorders. The session received media coverage of discussions of epilepsy, pediatric applications of brain imaging, and innovations in differentiation among, and early diagnosis of, dementias.

In a special scientific and informational presentation on November 28, staff members from the National Cancer Institute (NCI) expressed their hopes that “molecular imaging will play an integrated and essential role in future cancer prevention and management.” Lalitha Shankar, MD,

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Photo courtesy of the Radiological Society of North America.

Noteworthy on the exhibit floor were the numbers of individuals from medium-sized hospitals and smaller imaging centers sent by their institutions to purchase a first PET/CT unit. At the same time, other visitors looked to the future by investigating 64-slice PET/CT units and enhanced SPECT/CT capabilities. Higher resolution capabilities, reconstruction innovations, and redesigned nuclear medicine workstations also garnered attention.

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PhD, said, “By 2015, our vision for imaging involves decreasing the time and expense involved in cancer

detection and treatment.” She singled out the role of nuclear imaging, noting that, “Imaging tracers such as FDG PET are extremely useful in oncology for diagnosing and staging malignancies, assessing tumor recurrence, and monitoring response to therapy.” C. Carl Jaffe, MD, described the National Institutes of Health funding processes for cancer research and pointed to the higher hurdles for high technology imaging innovations. “More elaborate technology has to prove that it has contributory value,” he said. He also noted the barriers to effective sharing of data among clinical trials, problems that the new NCI caBIG In Vivo Imaging Workspace initiative will address (see story in this issue of Newsline, page 16N). John Hoffman, PhD, discussed drug development and regulatory approval processes for imaging agents. “Fewer than 10% of all Investigational New Drug efforts for new molecular entities progress beyond the investigational stage,” he said.

Evidence of the extent to which nuclear medicine is now an integral part of a broad spectrum of clinical practice could be seen in perusing the RSNA online listing of presentations. Although “nuclear medicine” was officially listed as the topic of 52 sessions, the words PET and SPECT occurred in the synopses of many more presentations—an indication that the tools of the field are being used routinely in support of wider areas of research. ☼