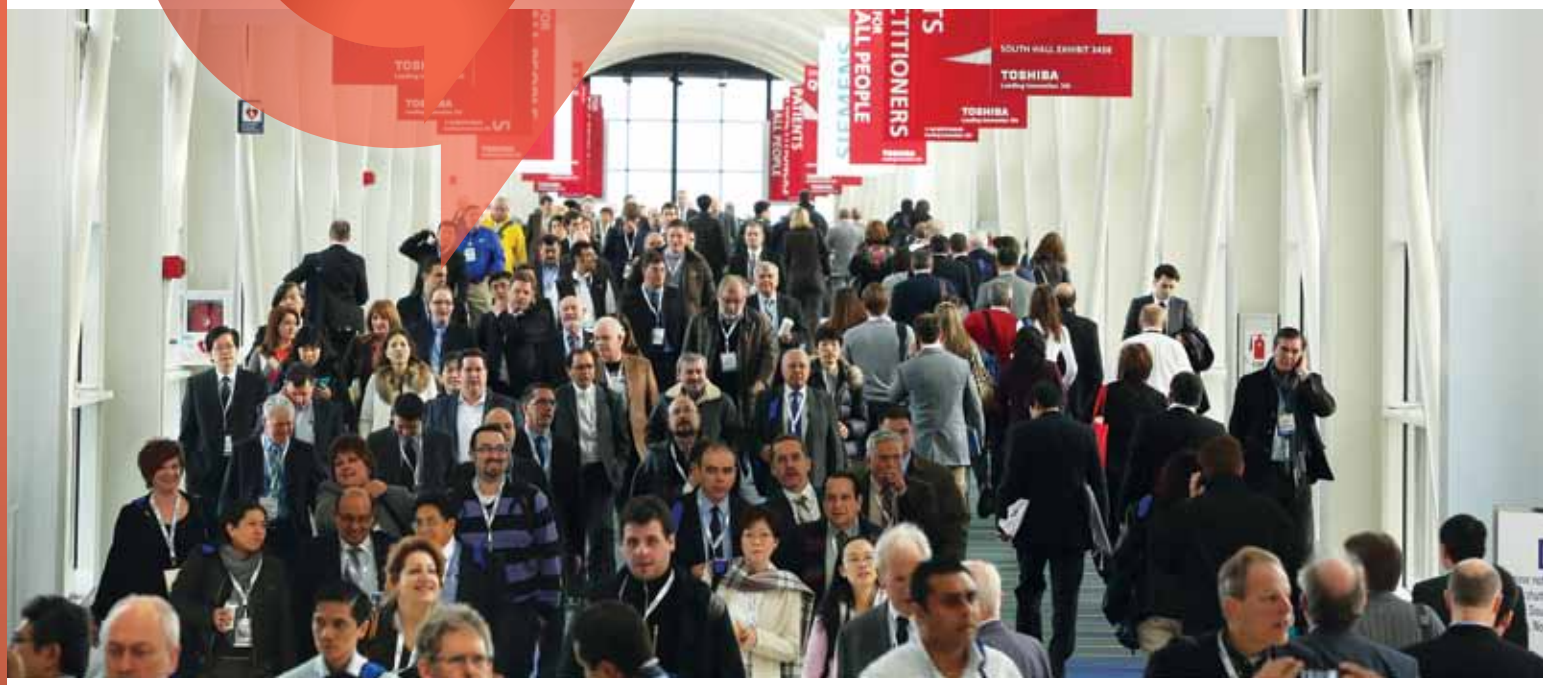

LEARNING OPPORTUNITIES

From lectures and special sessions focused on the specialty's hottest topics to the presentations of cutting-edge research and the latest in radiology informatics, learning opportunities in every subspecialty abound at RSNA 2013. With full participation in the meeting, each physician can earn up to 93.75 AMA PRA Category 1 Credits™.

RSNA 2013 Offers 'Don't-Miss' Science, Education Programs

RSNA 2013's rich offering of scientific presentations, education exhibits and courses will keep attendees abreast of the latest discoveries and techniques in medical imaging. The RSNA 2013 program delivers exciting content for every level of experience—from member-in-training to veteran radiologist.

"Imaging science is continuing to expand at a rapid pace," said Scientific Program Committee chair **Matthew A. Mauro, M.D.** "New modalities or techniques such as tomosynthesis, elastography, immunoradiology, MR/PET and high-intensity focused ultrasound are well represented within this year's scientific program."

Applications of current imaging modalities are expanding to better explore neurodegenerative diseases, traumatic brain injuries and atherosclerosis, and presentations will describe the expansion of mobile devices for on-site image interpretation and the investigation of emergency imaging utilization, Dr. Mauro added. "There will be components of the scientific program that will stimulate all attendees," he said. "It should not be missed."

Along with the traditional stand-alone posters and electronic education exhibits, RSNA 2013 will feature a new concept: Enhanced Education Exhibits, said **Isaac R. Francis, M.D.**, Education Exhibits Program Committee chair.

"We will be trying Enhanced Education Exhibits on a select few traditional stand-alone posters, which will have embedded QR codes as well as additional features such as video clips, quiz material and teaching points," Dr. Francis said. "These can be downloaded to smartphones and tablets to be viewed at the meeting or later."


Mauro


Francis


Frush

"The Refresher Course Committee, together with a hard-working RSNA staff, have planned an exceptional program for the 2013 meeting," said **Donald P. Frush, M.D.**, RSNA Refresher Course Committee chair. "I am always amazed at the increasing quality, diversity and innovation of the comprehensive offerings at each year's annual meeting,"

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The RSNA 2013 program will offer a wide spectrum of courses for all levels of radiologists, radiation oncologists, medical physicists, trainees and other healthcare professionals, Dr. Frush said.

RSNA received 13,393 abstracts to consider for presentation at RSNA 2013—231 more than last year. Of those, 2,223 were chosen for education exhibits and 2,775 were chosen for formal or informal scientific presentations.

Breast Imaging

This year's roster of breast submissions includes presentations on clinical tomosynthesis, synthetic 2D images with tomosynthesis, quantitative imaging and MR phenotypes, MR screening of "intermediate risk women"—breast cancer survivors or women with cellular atypias—and clinical implementation for tomosynthesis, said Scientific Program Breast Subcommittee chair Emily F. Conant, M.D. There is a trend toward imaging and risk prediction tailored toward the individual patient, Dr. Conant said.

A wide mix of educational presentations will appeal to learners of every level, said Education Exhibits Breast Subcommittee chair Hiroyuki Abe, M.D. "We have multiple reviews for residents and beginning radiologists, such as quality control and radiology-pathology correlations of various benign and malignant diseases, and up-to-date presentations for practicing radiologists such as reviews for tomosynthesis, breast MR imaging and related procedures, and automated whole breast ultrasound," Dr. Abe said. Newer techniques featured include opto-acoustic breast imaging, preoperative localization techniques and high-intensity focused ultrasound.

Cardiac Radiology

Quantitative imaging with MR is one of this year's hottest topics, said Arthur E. Stillman, M.D., Ph.D., chair of the Scientific Program Cardiac Subcommittee. Along with validation of automated software for perfusion, correlation of biomarkers with coronary artery disease and software to reduce coronary motion, Dr. Stillman reported a trend toward dose reduction strategies for cardiac CT.

"We have material for all levels, from resident to fellow to practicing radiologist,

on a wide range of topics including coronary artery disease, non-ischemic heart disease, trauma, congenital heart disease, and surgery and intervention," said Education Exhibits Cardiac Subcommittee chair Shawn D. Teague, M.D.

"We are seeing more material on newer procedures such as transcatheter aortic valve implantation and also on new technical advancements such as the next generation of iterative reconstruction with a focus on dose reduction during CT imaging," Dr. Teague said. "We also have new technical advancements in MR imaging, such as new pulse sequences which provide quantitative information inherent in the sequence. A new topic for this year is combined multimodality imaging with PET/MR."

Chest Radiology

"Interesting screening CT-related abstracts will be presented at this year's program pertaining to management of nodules and incidental findings," said Jane P. Ko, M.D., Scientific Program Chest Subcommittee chair. "Additionally, a large number of submissions pertain to lung nodule and malignancy." Integrated science and practice (ISP) sessions will include keynote lectures on interventional chest radiology and lung nodules and screening, Dr. Ko added.

Emerging topics this year are lung cancer screening, dual-energy CT application and chest MR imaging, said Eric T. Goodman, M.D., Education Exhibits Chest Subcommittee chair. "Attendees should be aware of dose reduction advances in chest CT imaging, such as iterative reconstruction software and low kV imaging," Dr. Goodman said.

Emergency Radiology

"This year, the emergency radiology scientific sessions will highlight a continued focus on CT protocol optimization for emergent imaging of all organ systems in order to improve diagnostic yield and reduce radiation dose," said Scientific Program Emergency Radiology Subcommittee chair Aaron D. Sodickson, M.D., Ph.D. "Dual-energy CT applications continue to grow in the ER setting. There is excellent content focusing on imaging utilization and emergency radiology practice management," Dr. Sodickson said. This year's Series Courses, combining refresher course content and scientific presentations, are "Advanced Concepts in Imaging of Trauma" and "Leveraging Technologies for State-of-the-Art Practice."

Emergency radiology continues to be a hot topic, with a roughly 25 percent increase in education exhibits accepted for 2013, said Education Exhibits Emergency Radiology Subcommittee chair Stephen F. Hatem, M.D. "These exhibits cover the gamut of the specialty, including submissions on technique and protocols, from organ-centered to disease-specific. The breadth is impressive. Reviews of traumatic injuries and nontraumatic emergencies, as well as forensic imaging, will provide attendees with a variety of educational opportunities."

Gastrointestinal Radiology

CT dose reduction remains one of the most competitive areas for gastrointestinal radiology abstract submission and acceptance, said David H. Kim, M.D., Scientific Program Gastrointestinal Radiology Subcommittee chair. "Besides assessing image quality, investigation is beginning into the important issue of lesion detection ability at these reduced doses," Dr. Kim said. "It has become evident that a trade-off exists with dose reduction, particularly in low-contrast situations such as metastatic disease to the liver."

Research in imaging biomarkers other than size to assess chemotherapeutic response is highlighted this year, Dr. Kim added. "Given the wide use of anti-angiogenic agents where lesion size may not reflect response, these other markers hold greater importance in assessment during therapy," he said.

Some of the most exciting topics include the innovative applications of dual-energy CT within the liver, pancreas and bowel, the early results of PET/MR in various oncologic settings, and the widening applications of ultrasound elastography in the abdomen, Dr. Kim said.

New and innovative ideas in PET/MR imaging for abdominal malignancies, diffusion-weighted MR imaging of the bowel and abdominal organs, and virtual CT enteroscopy are among the noteworthy issues for 2013 according to Lisa M. Ho, M.D., Education Exhibits Gastrointestinal Radiology Subcommittee chair.

Genitourinary Radiology/ Uroradiology

Because prostate cancer remains a deadly opponent, many national and international abstracts focus on screening and tumor staging both before and during therapy, said Scientific Program Genitourinary Subcommittee chair Julia R. Fielding, M.D.

"Results of international trials for uniform reporting of disease stage open the door to multi-institutional therapy assessment," Dr. Fielding said. "Total body imaging for staging of gynecological malignancies using diffusion imaging and combined MR and PET imaging are new hot topics for the year." Kidney neoplasms and prostate neoplasms are among the most popular submission for 2013, said Aytekin Oto, M.D., Education Exhibits Uroradiology Subcommittee chair, adding that emerging topics in adrenal imaging are also highlighted.

Health Services Policy and Research/Policy and Practice

"In recognition of its increasing importance in our radiology practice, we introduced a new subcategory this year: economics," said Dean K. Shibata, M.D., Education Exhibits Policy and Practice Subcommittee chair, adding that related sessions will include, "The Role of Radiology in Accountable Care Organizations," "What Does the Fiscal Cliff Compromise and Sequestration Really Mean," and "Hospital Readmissions: A Penalty that will Affect Interventional Radiologists."

The largest subcategory, quality improvement, includes exhibits on process mapping and managing a sentinel event, Dr. Shibata said. Attendees can explore widely appealing topics such as "Top Ten Commonly Misordered Diagnostic Imaging Studies by Primary Care Physicians" and "Current Status of Nephrogenic Systemic Fibrosis."

"There will also be a number of interesting topics with medicolegal themes—important subjects which impact everyone practicing radiology today," Dr. Shibata said.

Evidence-based medicine, quality, practice management and medical management are among this year's noteworthy presentations, said Scientific Program Services Policy and Research Subcommittee chair Aine M. Kelly, M.D. Innovative research projects include utilization management and its impact on radiology, as well as "smaller packaging of materials—such as contrast material—to save costs overall, a simple concept and solution to a large, important problem," Dr. Kelly said.

"Compliance with guidelines and their cost implications is an important topic because of current health system restraints, which will force us to make difficult decisions, addressing the trade-off between practicing 'good medicine' and saving money," Dr. Kelly advised.

Informatics

"Evidence of the efficacy of decision support tools for ordering clinicians is growing," said Scientific Program Radiology Informatics Subcommittee chair David S. Hirschorn, M.D. "People keep finding new uses for mobile devices—for patient education about pre-test preparation, for tracking resident procedure logs, and even for use as a microphone and speech recording system for dictation. The most popular category of submission remains image processing."

Important subjects include crowd sourcing in radiology, immediately catching errors in reports, communicating results directly to patients and effective use of decision support, Dr. Hirschorn said.

Education Exhibits Radiology Informatics Subcommittee chair Katherine P. Andriole, Ph.D., said, "We continue to receive a large number of submissions for the educational tools and for the image processing and analysis categories, including an increase in quantitative imaging methods. This year we

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saw an increase in the number of submissions for the emerging technologies and for the quality-safety categories."

RSNA 2013 attendees can view these exhibits throughout the week, Dr. Andriole noted. "Some focus on hands-on technology while others are translational research and clinical research exhibits."

Molecular Imaging

RSNA is providing a critical venue for national and international scholars to present their latest findings in molecular imaging and to discuss emerging technologies encompassing MR imaging, PET, CT, ultrasound, optical imaging and tracer development, said Satoshi Minoshima, M.D., Ph.D., chair of the Scientific Program and Education Exhibits Molecular Imaging Subcommittees.

"Attendees will be able to see translational efforts in molecular imaging—cutting-edge technologies developed in basic sciences and their clinical applications," Dr. Minoshima said.

Multimodal imaging continues to be a focus of RSNA's molecular imaging offerings, Dr. Minoshima continued, noting an increase in "non-radioactive" studies in areas including MR, ultrasound and optical imaging. Applications for non-cancer conditions, such as infection, are increasing, he said. Unique investigational studies address molecular MR immunoradiology in multiple sclerosis, novel optical imaging probe for colorectal cancer, targeted ultrasound for pancreatic cancer, imaging evaluation of cytoskeletal therapy for traumatic brain injury and MR colonography with nanoparticles.

Musculoskeletal Radiology

This year's submissions include an increasing focus on diagnosis and treatment of various musculoskeletal tumors, said Jon A. Jacobson, M.D., Scientific Program Musculoskeletal Radiology Subcommittee chair. "For example, several abstracts use MR imaging-guided high intensity focused ultrasound for the treatment of osteoid osteomas," Dr. Jacobson said.

"From a diagnostic perspective, several abstracts discuss the use of whole-body MR imaging for the diagnosis and staging of multiple myeloma," Dr. Jacobson continued. "In addition, functional MR imaging was used in several presentations in the evaluation of soft tissue sarcomas to diagnose recurrent disease and to assess early response to tumor treatment. As a result of an increase in these high-quality abstract submissions, several scientific sessions will be offered on musculoskeletal intervention and tumor imaging."

Neuroradiology

Arterial vessel wall imaging is a new and interesting trend in neuroradiology, said Pratik Mukherjee, M.D., Ph.D., Scientific Program Neuroradiology Subcommittee chair. Other topics include intravenous volume CT angiography vs. intraarterial digital subtraction angiography (IA DSA), 4DCT angiography vs. IA DSA for dural arteriovenous fistulas, molecular imaging of multiple sclerosis, quantitative imaging of Alzheimer disease and structural connectomes for mapping Alzheimer disease.

William T. Yuh, M.D., Education Exhibits Neuroradiology Subcommittee chair, reported a 5 percent increase in neuroradiology abstracts this year, with an increasing variety of topics and wider spectrum of disease processes.

"These are useful for teaching purposes," Dr. Yuh said. "There has been an increase in head and neck abstracts, including a good number of anatomy and congenital-developmental subcategory submissions. We will see more exhibits on advanced techniques and more that address true research questions. Together with advanced neuroimaging techniques and their application in various disease processes, such as head and neck cancers, the exhibits will be interesting to follow."

Nuclear Medicine

"Hybrid imaging with PET/MR for oncologic, cardiovascular and neurologic applications continues to grow and is an active area of investigation for clinical and research applications," said Jonathan E. McConathy, M.D., Ph.D., Scientific Program Nuclear Medicine Subcommittee chair. "Many exciting presentations will focus on the technical considerations, clinical applications and potential limitations of this new imaging modality."

A number of noteworthy abstracts will be presented during the Non-FDG PET Radiotracers in Oncology series session on Tuesday, Dr. McConathy said. "Some of these emerging PET tracers are on the cusp of widespread clinical use and have the potential to substantially improve imaging capabilities for patients with cancer."

"Prostate cancer imaging is an area to watch this year," Dr. McConathy continued. Recent exciting results with PET tracers such as sodium [F-18]fluoride, [C-11]choline, and [F-18] FACBC as well as hybrid PET/MR imaging techniques will be presented. "Given the frequency of prostate cancer and the limitations of current widely available imaging techniques, these new tracers and technologies may be an important area of growth in nuclear medicine in the next few years," Dr. McConathy said.

Nuclear medicine education exhibit submissions increased by about 25 percent this year, said Education Exhibits Nuclear Medicine Subcommittee chair Rathan M. Subramaniam, M.D., Ph.D. "The major trend was increasing numbers of PET/MR imaging abstracts along with PET/CT," Dr. Subramaniam said. "This reflects the installment of PET/MR scanners for clinical purposes at many centers around the world. We expect this trend will continue in the future. PET/MR abstracts are newsworthy, as this is a major development and will influence radiology in training, technical, clinical, economic and administrative aspects, likely as a disruptive technology."

Obstetrics/Gynecology

New trends to watch in obstetric and gynecologic radiology include 3T MR imaging of the female pelvis, new applications for 3D ultrasound and PET/CT for gynecologic malignancies, said Robert D. Harris, M.D., M.P.H., chair of the Education Exhibits Obstetrics/Gynecology Subcommittee. "An older topic revisited, with some interesting new aspects, is ultrasound reviews of fetal anomalies," Dr. Harris said.

Pediatric Radiology

Neuroradiology saw the biggest increase in pediatric submissions, said Rajesh Krishnamurthy, M.D., Scientific Program Pediatric Radiology Subcommittee chair. Trends include increasing use of low-dose CT compared to MR imaging for cardiac indications, PET/MR in pediatrics, and advances in diffusion-weighted imaging and resting functional MR imaging in children.

Provocative topics this year include diffusion kurtosis imaging of the brain, respiratory navigator-free breathing cine steady-state free precession techniques for evaluating the heart, amide proton transfer in hypothermia, and MR-guided drilling of osteochondritis, Dr. Krishnamurthy said.

Fetal imaging and radiation dose saw the largest increase in education exhibits, said Education Exhibits Pediatrics Subcommittee chair Craig E. Barnes, M.D. "There is a large variety of topics presented this year that will be of interest to trainees, general radiologists and those practicing pediatric radiology," Dr. Barnes said.

Physics

An important focus for attendees is dual-energy and spectral (photo-counting) CT, while spectral CT and low-dose CT remain hot topics for the year, said Scientific Program Physics Subcommittee chair Xiaochuan Pan, Ph.D.

"A frequent comment from participants in last year's physics sessions was that there was a considerable session overlap on CT topics at the same time," Dr. Pan said. "In an attempt to address that, we have re-organized the CT sessions to spread out throughout the meeting."

Radiation Oncology and Radiobiology

Head and neck cancer abstracts have doubled this year, according to Scientific Program Radiation Oncology/Radiobiology Subcommittee chair Nina A. Mayr, M.D., adding that breast cancer abstracts have also increased.

These increases will synergize well with the respective Bolstering Oncoradiologic and Oncoradiotherapeutic Skills for Tomorrow (BOOST) course topics, which include anatomy and contouring and case-based reviews of head and neck and breast cancer, Dr. Mayr said. "The head and neck cancer program has an e-contouring session, adding to the quality of the program," she said. Outcomes research remains strongly represented in radiation oncology, she added.

The challenges of incorporating newer imaging technologies into radiation treatment planning, image registration and response assessment, and an appreciation of the limits of quantitative imaging are of interest this year, said Sunil Krishnan, M.D., Education Exhibits Radiation Oncology Subcommittee chair.

Dr. Krishnan observed: "These research trends again highlight the need for constant communication between radiation oncologists and diagnostic radiologists to accurately diagnose, treat and monitor patients."

Vascular/Interventional Radiology

Scott O. Trerotola, M.D., Scientific Program Vascular and Interventional Subcommittee chair, identified radioembolization and dose reduction—for contrast and radiation—as hot topics for 2013, along with research on evidence supporting prostate embolization. "Hopefully this is the 'next big thing' in interventional radiology," Dr. Trerotola said. "Atherosclerosis imaging (MR and CT) is becoming popular, and prostatic embolization is still on the radar," he added.

Submissions were strong in interventional oncology, venous disease and vascular imaging, said Education Exhibits Vascular/Interventional Radiology Subcommittee chair David C. Madoff, M.D. "In addition, many exhibits will highlight specific newer techniques and treatment strategies such as renal denervation, prostate artery embolization and irreversible electroporation," Dr. Madoff said.

PEDIATRIC AND NUCLEAR MEDICINE/ MOLECULAR IMAGING CAMPUSES

This year, separate Pediatric and Nuclear Medicine/Molecular Imaging campuses feature many components—including refresher and series courses, scientific presentations, and education exhibits—of these subspecialties, to facilitate focused study during the week.

The Pediatric Campus is located in Rooms S101AB and S102AB of McCormick Place. The Nuclear Medicine/Molecular Imaging Campus is located in S503AB, S504CD and S505AB. Lunch hour and afternoon presentations of scientific posters and education exhibits in the pediatric and nuclear medicine/molecular imaging subspecialties will take place in the campuses.

Plenary Lectures

RSNA 2013 will feature plenary session lectures on a spectrum of healthcare topics. All lectures will be presented in the Arie Crown Theater.

Annual Oration In Diagnostic Radiology

Sunday, December 1 • 8:30 a.m.

We Must Stand on the Shoulders of Giants

Radiology and interventional oncology share a strong focus on cancer detection and staging, locoregional therapy and follow-up. Despite their mutual goals and complementary skill sets, however, many radiology and radiation oncology departments struggle to be autonomous and at times compete for hospital resources and patients. In the new healthcare paradigm of evidence-based medicine, a cohesive team approach to cancer care makes the most economic sense, says **Damian E. Dupuy, M.D.**, who encourages deeper collaboration between these departments given the shared interests and synergy between their treatments. Patients stand to benefit from the reunification of spirit as well as intellect, he says. Quoting the timeless words of Sir Isaac Newton, Dr. Dupuy notes, "If I have seen further than others, it is by standing upon the shoulders of giants."

Dupuy

Dr. Dupuy is director of tumor ablation at Rhode Island Hospital and a professor of diagnostic imaging at the Warren Alpert Medical School of Brown University. Internationally recognized for his clinical expertise, teaching and research in image-guided ablation, Dr. Dupuy has helped broaden clinical applications to successfully combat adrenal cancer and cancers of the kidney, liver, lung, head and neck and skeleton. He pioneered technologies such as percutaneous microwave ablation, cryoablation and combination therapies using radiofrequency ablation with external radiation or brachytherapy. Dr. Dupuy has been the principal investigator of two National Cancer Institute-funded multicenter trials.

Dr. Dupuy chairs the Interventional Oncology Symposium at the RSNA Annual Meeting and is a member of RSNA's Public Information Advisors Network.

Eugene P. Pendergrass New Horizons Lecture

Monday, December 2 • 1:30 p.m.

Normal and Neoplastic Stem Cells: Implications for the Radiological Sciences

Research that bears on the earliest stages of cancer development as well as the sequelae of cancer treatment is important not only to radiation oncologists but to diagnostic radiologists as well. An investigation led by **Irving L. Weissman, M.D.**, into blood-forming stem cells and their non-self-renewing progeny found that they hold promise for regenerating the hematopoietic system after chemotherapy and radiation for cancer, replacing genetically defective or otherwise damaged blood-forming systems, understanding the stages of hematopoiesis that harbor the earliest stages of preleukemia and providing the first constant target found on all cancers.

Weissman

Dr. Weissman is a professor in the Department of Pathology and director of the Institute for Stem Cell Biology and Regenerative Medicine in the Stanford University School of Medicine. He has devoted his career to stem cell research, with particular interests including hematopoietic stem and progenitor cells, central nervous system stem and progenitor cells, and lymphocyte differentiation.

Dr. Weissman has founded three companies focused on bringing stem cell therapies into the clinic and served on the founding scientific advisory boards of three others. He has been an investigator of the Howard Hughes Medical Institute in Chicago and the Karel Beekhuis Professor of Cancer Biology and chair of the immunology program at Stanford. Dr. Weissman is a fellow in the American Association for the Advancement of Science and was elected to the Institute of Medicine of the National Academy of Sciences.

*Special Lecture**

Tuesday, December 3 • 1:30 p.m.

Mobilizing Human Potential

Continuing to address the healthcare challenges of the 21st century means answering some critical questions: How do we educate the students of tomorrow? How do we foster leadership among present and future practitioners? Former U.S. Secretary of State **Condoleezza Rice, Ph.D.**, will offer her experiences in how resources can be identified, attracted and mobilized to solve problems and forge new paths for the benefit of people worldwide.

Rice

From 2005 to 2009, Dr. Rice served as the 66th Secretary of State of the United States, the second woman and first African American woman to hold the post. She also served as national security advisor for President George W. Bush from 2001 to 2005, the first woman to hold the position. Her numerous books include two best-sellers, *"No Higher Honor: A Memoir of My Years in Washington"* and *"Extraordinary, Ordinary People: A Memoir of Family."*

***Note: Tickets are required for the Special Lecture to be delivered by Dr. Condoleezza Rice. Tickets may be obtained via the RSNA 2013 Course Enrollment process at *RSNA.org/register*.**

Annual Oration In Radiation Oncology

Wednesday, December 4 • 1:30 p.m.

Beneficial Liaisons: Imaging and Therapy

See the tumor, treat the tumor. How complicated can this be? Not long ago, notes **Paul M. Harari, M.D.**, external anatomy and plain X-rays served as the primary guide for radiation therapy. Broad field design was the prevailing paradigm with the knowledge that the tumor surely resided within. Collateral normal tissue damage was a necessary accompaniment of treatment and tumor dose was largely limited by normal organ tolerance. Today, says Dr. Harari, ablative radiation doses are delivered to complex 3D tumor shapes virtually anywhere in the body. Sharp dose gradients are created between tumor and critical normal tissues and high precision is sought for daily treatment across thousands of patients. We are poised to move well beyond "see the tumor, treat the tumor," Dr. Harari says, as we cross the threshold of unparalleled visualization within tumors, tracking individual tumor cells, developing diapeutic agents to simultaneously image and treat, and harnessing early response profiles to shape more personalized and effective future therapies.

Harari

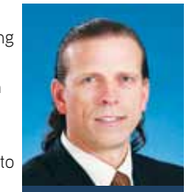
Dr. Harari is the Jack Fowler Professor and chair of the Department of Human Oncology at the University of Wisconsin School of Medicine and Public Health. Early career development awards from the American Cancer Society and the RSNA Research & Education (R&E) Foundation helped launch Dr. Harari's career as a physician scientist. His clinical and laboratory research focuses on treatment advances for head and neck cancer patients with emphasis on the interaction of molecular growth inhibitors combined with radiation. His clinical work emphasizes the highest quality imaging for cancer patients and the advancement of new imaging modalities that enhance our ability to assess both tumor anatomy and biology.

RSNA/AAPM Symposium

Thursday, December 5 • 1:30 p.m.

Imaging in Partnership: With Radiation Therapy

In this symposium presented in conjunction with the American Association of Physicists in Medicine, **David A. Jaffray, Ph.D.**, will discuss how multimodality imaging methods are being used in combination with high-precision radiation therapy delivery techniques to understand fundamental mechanisms of cancer pathogenesis, progression and treatment response.



Jaffray

Dr. Jaffray is a professor in the departments of Radiation Oncology, Medical Biophysics, and Institute for Biomaterials and Biomedical Engineering at the University of Toronto. With primary research interests in the development and application of image-guided radiation therapy, Dr. Jaffray has numerous patents issued and several licensed, including kilovoltage cone-beam CT for image-guided radiation therapy. Dr. Jaffray serves as the head of radiation physics and a senior scientist within the Ontario Cancer Institute at the Princess Margaret Hospital in Toronto, where he also holds the Orey and Mary Fidani Family Chair in Radiation Physics and is a principal in the STTARR Innovation Centre and Guided Therapeutics Group of the University Health Network. Dr. Jaffray is the director of the recently established Institute of Health Technology Development at the University Health Network (TECHNA).

Imaging in Partnership: With Physics and Quantitative Medicine

James A. Deye, Ph.D., will address the challenges and advances associated with quantitative imaging, and how more accurate and quantitative imaging is central to advancing the understanding of major questions in 21st century medicine. Imaging in partnership with medical physics and other technical and clinical disciplines provides a

Deye

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vital tool and multidisciplinary expertise for such advances.

Dr. Deye is a program director in the Extramural Radiation Research Program of the National Cancer Institute. During his career he has published in various areas of radiologic physics including high-energy photon beam production of neutrons and electrons, neutron dosimetry, shielding design, treatment planning quality assurance, operations research in radiation therapy and quality assurance in clinical practice. His current portfolio includes grants totaling more than $15 million in areas of advanced technologies and imaging in the planning and delivery of radiotherapy. Dr. Deye's past appointments include associate director of medical physics at George Washington University Medical Center, with responsibility for the clinical implementation of the Mid-Atlantic Neutron Therapy program, and director of medical physics at Inova Hospital Association in Northern Virginia, where he developed a department of 14 staff covering all areas of medical physics.

OTHER PLENARY SESSIONS

More information about these sessions is available at *RSNA2013.RSNA.org*.

SUNDAY
8:30 a.m.
President's Address
4:00 p.m.
Report of the RSNA Research & Education Foundation
4:00 p.m.
Image Interpretation Session

FRIDAY
12:30 p.m.
Friday Imaging Symposium

Virtual Meeting

Add the Virtual Meeting for the Best RSNA 2013 Experience

Want to make sure you don't miss featured RSNA 2013 sessions? You can experience the world's premier medical imaging event from any computer or mobile device via RSNA's Virtual Meeting.

Visit *RSNA.org/Virtual* to add the Virtual Meeting to your registration and tune in to live sessions during RSNA 2013 and on-demand through December 13. The fee is $100 for RSNA/AAPM members; $300 for non-members. RSNA members-in-training, medical student members and retired members can access the Virtual Meeting for free.

Visitors to the Virtual Meeting page can view video highlights of the RSNA 2012 Virtual Meeting and explore the full gamut of offerings planned for RSNA 2013. Starting November 30, registered Virtual Meeting attendees can:

- **Watch more than 40 live streaming courses, including plenary sessions, the Image Interpretation Session, refresher courses, multisession courses, series courses and scientific sessions.**
- **Submit diagnoses for Cases of the Day consisting of five cases per subspecialty area throughout the week. Answers will be revealed the following morning.**
- **Earn Continuing Education credits—live participation lets you maximize your CME.**
- **See select education exhibits and digital scientific presentations.**
- **Shop cutting-edge products, services, equipment and software from RSNA 2013 exhibitors.**
- **Watch live exhibitor product theater demonstrations.**
- **See courses and exhibitor presentations on demand through December 13.**

RSNA is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians. RSNA designates this live activity for a maximum of 81.25 *AMA PRA Category 1 Credits*™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

To view the Virtual Meeting Program, go to *RSNA2013.RSNA.org/virtual/program*. For more information, contact *virtual@RSNA.org*.

Saturday Courses

Radiología de la Infeccion e Inflamacion: Sesión del Colegio Interamericano de Radiología (CIR) en Español/Imaging of Infection and Inflammation: Session of the Interamerican College of Radiology (CIR)

This session is presented in Spanish with simultaneous English translation.

AAPM/RSNA Tutorials: CT Dose and Image Quality

The Physics Tutorial for Residents looks at CT dose and the technical factors which affect patient dose. Different approaches to image reconstruction and their contribution to patient dose reduction, as well as development and review of low-dose protocols for CT will be discussed. Immediately following is the Tutorial on Equipment Selection, which addresses the differences in design and imaging reconstruction in commercial systems designed for CT imaging and aftermarket image post-processing systems and the impact dose reduction techniques have on image quality and the clinical management of disease. Also to be discussed is development of a business model for incorporating dose reduction into CT imaging.

Grantsmanship Workshops

Two workshops examine the National Institutes of Health (NIH) grant application process from different perspectives. The "NIH Grantsmanship Workshop" helps applicants understand the process for preparing a competitive research or training grant application. "RSNA/ARR Study Section Reviewers Workshop—What It Takes to Be an Expert Reviewer for the NIH: The Peer Review Process Demystified" prepares reviewers with an overview of grant mechanisms and evaluation criteria. Both sessions give attendees the opportunity to learn from a mock study section. The registration fee is $35.

Special Courses

Special Interest, Hot Topic, Controversies/Game Sessions

Discover radiology-related topics that are late-breaking (Hot Topics), are particularly controversial or offered in a game format (Controversies/Game), or are programs the RSNA Board deems of particular importance (Special Interest). High levels of audience interest and opinion are expected.

Sessions are offered Monday-Thursday; see the *RSNA Meeting Program* for titles.

RSNA Diagnosis Live

These exciting expert-moderated sessions feature a series of interactive case studies to challenge radiologists' diagnostic skills. Submit and discuss your responses with your colleagues in a fast-paced game format. Monday's session (SPDL21) from 4:30 to 6:00 p.m. will feature chest and abdomen cases; Wednesday's session (SPDL41) from 4:30 to 6:00 p.m. will feature neuroradiology and musculoskeletal cases; and Thursday's session (SPDL51) from 3:00 to 4:00 p.m. will be a radiology potpourri.

Scientific Paper Sessions

Sessions are offered over nine time slots during the week and will include 2,775 papers in a range of subspecialties.

France Presents

France is the latest country to be spotlighted as part of the "Country Presents" sessions at the RSNA annual meeting. The France Presents session is scheduled for Monday, 10:30 a.m.–12:00 p.m., and offered in conjunction with the Société Francaise de Radiologie (SFR).

This year's program will provide attendees with an opportunity to hear the latest in oncologic imaging from top French radiologists, including sessions on:

- **Whole-body Diffusion in Hematology Malignancies, Alain E. Luciani, M.D.**
- **Beyond Morphology: Molecular Imaging for Biopsy Guidance in Oncology, Eric De Kerviler, M.D.**
- **Intra-arterial Therapy of Liver Malignancies—Where We Stand and Future Trends, Thierry De Baere, M.D.**
- **Colorectal Liver Metastases: Role of the Radiologist in the Multidisciplinary Team, Valérie Vilgrain, M.D.**

France Presents will also include other activities and services focusing on the country's contributions to the annual meeting. On Sunday, in the Global Connection area of RSNA Services, a special discussion on "Navigating the RSNA 2013 Annual Meeting" will be led in French from 10:00 to 10:30 a.m., including information on everything from scientific sessions to restaurants and getting around Chicago.

SFR will host Booth 1122, South Building, Hall A to showcase its contributions to RSNA over the years.

In addition, RSNA's Technical Exhibition will highlight all of our French exhibitors, including those in the French Pavillion.

See the full list of French companies and much more information on France Presents, at *RSNA.org/FrancePresents*.

Refresher and Multisession Courses

RSNA 2013 offers more than 300 refresher courses covering traditional and cutting-edge topics. Multisession courses are scheduled for time blocks ranging from several hours to several days, to allow intensive study of various topics.

Quality Essentials Certificate Sessions at RSNA 2013

Attendees of Monday's Quality Special Interest Session and the RSNA 2013 Quality Symposium will have the opportunity to earn up to four Quality Essentials Certificates designed to recognize those who demonstrate a threshold level of knowledge in various quality improvement domains.

With the addition of two new courses this year, Quality Essential Certificates will be available for each of the following sessions:

MONDAY
4:30-6:00 p.m. (SPSI22)
- **Getting Radiologist Peer Review Right**

TUESDAY
8:30-10:00 a.m. (MSQI31)
- **Safety at Work**

10:30 a.m.-12:00 p.m. (MSQI32)
- **Keeping our Customers Satisfied**

A Quality Essentials Certificate is awarded to participants who earn 80 percent or higher on the related SAM test. Within six months of their first live offering, the courses and tests are also available through RSNA's online education offerings.

New for 2013: Advanced Level Quality Certificate

After the annual meeting, candidates can work toward earning an Advanced Level Quality Certificate recognizing those who attain a Quality Essentials Certificate in each of the following categories: Quality Improvement in Your Practice, Staff and Patient Safety, Customer Satisfaction and Radiologist Performance Improvement.

Candidates must also submit a Quality Storyboard abstract that is accepted for display at an RSNA Meeting.

Lakeside Learning Center

New Location

The Lakeside Learning Center, located in Hall D, Level 3 (one floor up from its previous location), is home to education

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exhibits and scientific informal (posters) presentations, grouped according to subspecialty. Many authors of posters and education exhibits are scheduled to give lunchtime presentations of their work; see the *RSNA Meeting Program* for days and times.

Select backboard panel education exhibits in each subspecialty will contain QR codes that, when scanned with a smartphone, will take users to an electronic version of the poster and supplemental materials. Copies of the panels will be located in the "Enhanced Education Exhibits" area near the entrance to the Lakeside Learning Center and copies from each subspecialty will be located in the individual subspecialty communities.

Electronic scientific posters and education exhibits (excluding Enhanced Education Exhibits) are available to meeting attendees via the Virtual Meeting 24 hours a day throughout the meeting week.

Quantitative Imaging

Located in the Lakeside Learning Center, the Quantitative Imaging Reading Room is an educational showcase highlighting products and applications that integrate quantitative analysis and structured reporting into the image interpretation and reporting process.

At the Quantitative Imaging and Biomarkers Alliance (QIBA) kiosk, see the latest efforts of the RSNA-directed group that aims to improve the value and practicality of quantitative imaging biomarkers by reducing variability across devices, patients and time.

Radiology Informatics

Integrating the Healthcare Enterprise (IHE®)

Visit the Integrating the Healthcare Enterprise (IHE®) exhibit in Booth 8140 in North Building, Hall B, for demonstrations by care sites and commercial vendors of IHE® methods for sharing image-enabled electronic health records and radiation dose information. Demonstrations take place regularly during exhibit hours.

Informatics Courses

More than 30 informatics courses will be offered on topics include advanced imaging tools, online searching, and RSNA Informatics projects such as myRSNA®, MIRC®, RadLex®, IHE® and Reporting.

Informatics Area—Learning Center

Informatics exhibits in the Lakeside Learning Center include posters and stand-alone computer exhibits on a range of topics in imaging informatics.

Image Sharing Demonstration—Hall A (North Building)

The annual Image Sharing Demonstration features cutting-edge developments in imaging informatics to improve patient care in radiology. These include standardized technology, structured radiology reports, radiation dose monitoring and image sharing based on technology used in RSNA's NIBIB-funded Image Share Network.

For more information, go to *RSNA.org/Informatics.aspx*.

RSNA Education

Earn SAM, CME Credits

Thirty-four in-person self-assessment module (SAM) courses will be offered at RSNA 2013, allowing participants to obtain both continuing medical education (CME) and SAM credit for each course attended. With the help of SAM faculty, this year's courses have been designed to cover a wide range of subspecialties.

RSNA offers SAMs that meet the American Board of Radiology's (ABR) criteria for a self-assessment activity in the ABR Maintenance of Certification program. Participants can earn 1.50 SAM credit for each SAM course in addition to 1.50 *AMA PRA Category 1 Credits™*.

The RSNA Annual Meeting in-person SAMs is an Accredited Self-Assessment Program (SAP – Section 3) as defined by the new Maintenance of Certification program (MOC) of the Royal College of Physicians and Surgeons of Canada (RCPSC), and has been approved by the Canadian Association of Radiologists (CAR) for a maximum of 1.50 credit hours.

Guarantee your seat in SAM courses by pre-registering at *RSNA.org/Registration* by November 27. Attendees interested in sold-out SAM courses can go directly to the SAM course room and attendees will be seated on a first-come, first-serve basis after all ticketed attendees have been seated.

Members attend RSNA 2013 SAM courses free; non-members pay a fee of $50.

RSNA Store Features CD Refresher Courses, New Collections, Demonstrations

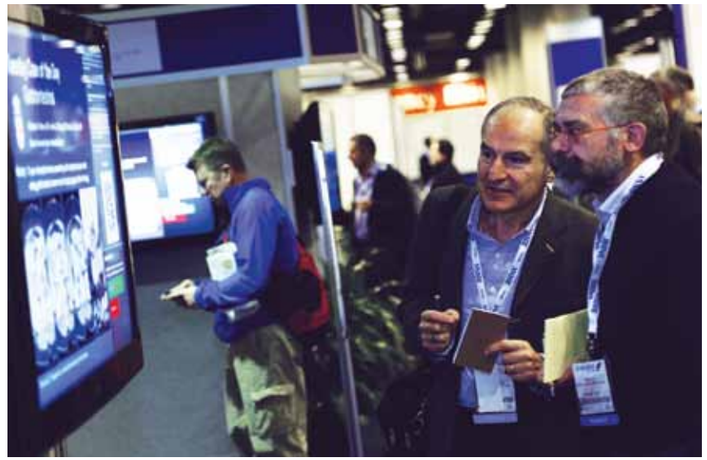
Visit the RSNA Store to experience all the educational products and services that RSNA has to offer and to talk to RSNA staff about the newly redesigned online education offerings, learn how to access CME content from your mobile tablet device, and more.

This year, the RSNA Education Center offers 20 new refresher courses for purchase on CD at the RSNA Store, Including, "Emergency Neuroradiology," "Practical Gynecologic MRI" and "Acute & Chronic Pulmonary Emboli." Most courses focus on specific imaging challenges and cover a broad range of subspecialty topic areas. Individual CDs are $55 for members and $80 for non-members.

The RSNA Store will also feature new CD collections, in either a two-or three-disc format. Each collection contains a set of refresher course CDs pertaining to a particular subspecialty and offers an audio-visual presentation, along with line-by-line transcript and CME test. Collections provide the opportunity to earn multiple CME credits and offer a 25 percent discount as compared to individual CD purchases.

CD collections from previous annual meetings will also be available for purchase at the RSNA Store. Collections are priced based on the number of CDs per collection but generally range from $80 to $175 per collection.

RadioGraphics special editions 2009-2013 will be available for browsing and purchase. The RSNA Store will also feature the print version of *Radiology* Select Volume I: Pulmonary Nodules, Volume II: Stroke, Volume III: Coronary Artery Disease and Volume IV: Breast Cancer Screening. *Radiology* Select is a continuing series of selected *Radiology* articles that highlight developments in imaging science, techniques and clinical practice. *Radiology* Select in-print editions are available for $50 to both members and non-members.



RSNA staff will also be available in the store to give demonstrations of the RSNA/AAPM Physics Modules, online Education search, CME Credit Repository and more.

Academy of Radiology Leadership and Management

Forty-two courses at RSNA 2013 count toward the Certificate of Achievement offered by the Academy of Radiology Leadership and Management (ARLM). RSNA has collaborated with the Association of Administrators in Academic Radiology Departments, American Roentgen Ray Society, Association of University Radiologists, and the Society of Chairs of Academic Radiology Departments in the ARLM.

Medical imaging professionals can earn a Certificate of Achievement from ARLM by participating in 50 hours of education—including at least 30 hours in person—across a spectrum of domains including financial skills, human resources, professionalism, legal/contracting and academic mission.

Learn more about ARLM-eligible courses by picking up an ARLM subspecialty brochure at McCormick Place and looking for the (ARLM) in the *RSNA Meeting Program*. RSNA Store staff can answer questions regarding ARLM achievements or courses.

NEW PROCESS FOR CLAIMING CREDIT AT RSNA 2013

Online Evaluation and Claim Center (OECC) Makes Process Easier, More Immediate

RSNA 2013 attendees need not look for attendance "chits" in their registration materials. Attendees will now document their attendance by evaluating RSNA 2013 courses and sessions and claiming their credits online—via their own laptop and mobile devices or at any of the Internet Kiosks within McCormick Place.

The new Online Evaluation and Claim Center (OECC) allows attendees to begin their evaluations as early as 10 minutes after a course begins, claim their credits onsite and walk away with printed certificates in hand. Attendees will also receive links via email that allow printing of certificates at home, and for RSNA members credits are automatically added to the RSNA CME Repository.

After the meeting, attendees will still be able to evaluate courses and claim credit for one week. Detailed instructions will be included in the Meeting Bags distributed to professional registrants and RSNA staff will be on hand at the Internet Kiosks to assist with the process.