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RSNA MISSION
The RSNA promotes excellence in patient care and healthcare delivery through education, research and technologic innovation.

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1964: 50th Anniversary of RSNA
The Society celebrated its “Golden Anniversary” meeting at the Palmer House hotel in Chicago with a total registration just shy of 4,500. “Whatever has been of concern to the specialty of radiology has been of concern to the Radiological Society of North America,” noted 1938 RSNA President Howard P. Doub, M.D., in a 1964 Radiology editorial, “The Radiological Society of North America: Fifty Years of Progress.”

1974: RSNA Granted Permission to Award CME
In the next 40 years RSNA went on to award thousands upon thousands of credits to radiologists, medical physicists, radiologic technologists, and others with its annual meeting programs and offerings through its online education portal. In 2010, RSNA received a six-year accreditation renewal from the Accreditation Council for Continuing Medical Education.

1976: Erskine Lecture First Presented at Annual Meeting
The predecessor to the present-day Annual Oration in Radiation Oncology was presented in honor of the 1925 RSNA president Arthur W. Erskine, M.D., as a bequest from his wife. Henry S. Kaplan, M.D., presented the first Erskine Lecture, “Hodgkin’s Disease: Multidisciplinary Contributions to the Conquest of a Neoplasm.”

1999: RSNA Journals Go Online
Having journals like Radiology and RadioGraphics online “will allow us to conduct need-to-know-now literature searches at our workstations, giving us an instant library and affording us the opportunity to make better consultative decisions,” Luther E. Barnhardt, M.D., a member of the former Learning Center Editorial Board, noted in a Radiology editorial at the time. The journals now receive a combined 5 million visits per year.

2012: First Margulis Award for Scientific Excellence Bestowed
The Margulis Award for Scientific Excellence is an annual award for the best original scientific article published in Radiology and is announced during the annual meeting. The award is named for Alexander R. Margulis, M.D., a distinguished investigator and inspiring visionary in the science of radiology.

NEW RADIATION SAFETY CASE ADDRESSES DIGITAL RADIOGRAPHY
The fourth Image Wisely® Radiation Safety Case, Technical Errors and Image Quality in Digital Radiography, is now available to help radiologists, imaging technologists and medical physicists assess their understanding of important radiation safety concepts including dose monitoring and optimization.

“Because digital X-ray systems are so tolerant of over- and under-exposure it is critical that imaging professionals review the quality of the image in conjunction with the default settings used,” said case author Charles Willis, Ph.D. “This case presents critical technical parameters to evaluate when assessing image quality and radiation dose in digital radiography.”

Case content includes embedded questions that provide expert feedback as well as references and resources for further study. Technical Errors and Image Quality in Digital Radiography offers a total of 0.5 AMA PRA Category 1 Credits™; 0.5 MPCE credit by the Commission on Accreditation of Medical Physics Education Programs, Inc.; and 0.5 Category A credit hours of the American Registry of Radiologic Technologists.

For more information go to Imagewisely.org/Case. Image Wisely was developed by RSNA, the American College of Radiology, American Association of Physicists in Medicine and the American Society of Radiologic Technologists.
SNMMI Names Officers, Awards Siegel with Cassen Prize

Peter Herscovitch, M.D., director of the PET Department at the National Institutes of Health Clinical Center in Bethesda, Maryland, was named president of the Society of Nuclear Medicine and Molecular Imaging (SNMMI) during its recent annual meeting in St. Louis.

Other SNMMI officers elected for 2014-15 are Hossein Jadvar, M.D., Ph.D., M.P.H., M.B.A., tenured associate professor of radiology and of biomedical engineering at the University of Southern California (USC), as president-elect, and Sally W. Schwarz, M.S, R.Ph., B.C.N.P., research associate professor in radiology at Washington University School of Medicine in St. Louis, as vice president-elect.

Barry A. Siegel, M.D., known for his pioneering work in PET, was awarded the Benedict Cassen Prize, which is presented every two years by the Education and Research Foundation for Nuclear Medicine and Molecular Imaging to a living scientist or physician/scientist whose work has led to a major advance in basic or clinical nuclear medicine science. Dr. Siegel is a member of the RSNA News Editorial Board.

2015 R&E Grant Application Process Opens This Month

Individuals interested in obtaining RSNA Research & Education (R&E) Foundation grants for 2015 can begin submitting their applications starting in October. For more information, go to RSNA.org/Foundation or contact Scott A. Walter, M.S., Assistant Director, Grant Administration at 1-630-571-7816 or swalter@rsna.org.

EDUCATION GRANTS
Deadline—Jan. 12
• Education Scholar Grant
• RSNA/AUR/APDR/SCARD Radiology Education Research Development Grant

RESEARCH GRANTS
Deadline—Jan. 15
• Research Scholar Grant
• Research Seed Grant
• Research Resident/Fellow Grant

RESEARCH MEDICAL STUDENT GRANT
Deadline—Feb. 2
Learn about the 2014 R&E Foundation grant recipients and their projects starting on Page 11.

International Day of Radiology

RSNA, the European Society of Radiology (ESR) and the American College of Radiology (ACR), along with other participating societies around the world, will celebrate the third International Day of Radiology (IDoR) on Nov. 8, the anniversary of the discovery of X-rays by Wilhelm Conrad Roentgen, Ph.D.

IDoR is meant to build greater awareness of radiology’s value and contributions to patient care and the vital role of the radiologist in the healthcare continuum.

Last year, more than 110 international societies recognized the day through various activities. The main focus of IDoR 2014 will be the important role brain imaging plays in the diagnosis and treatment of diseases and conditions of the brain.

Four booklets, The Story of Radiology, Vols. I and II, Making Cancer Visible: The Role of Imaging in Oncology and Breathe Easy, How Radiology Helps to Find and Fight Lung Disease are available, along with promotional materials, for download on RSNA, ACR and IDoR websites. A new brain imaging booklet has been developed for this year. Visit IDoR2014.com or RSNA.org/IDoR2014.

Host Societies Sought for International Visiting Professors

National radiology societies located in developing countries—or primarily serving those countries—are invited to apply to host an RSNA International Visiting Professor (IVP) team. The IVP team will lecture at the host’s national radiology society meeting. In addition, the society will be responsible for organizing visits to institutions that have active radiology training programs with the need and potential for educational enrichment from a visiting professor team.

Host societies are expected to provide hotel accommodations and meals for the IVP team for the duration of their visit and communicate program, schedule and hospitality arrangements to IVP team members and RSNA staff. The deadline to apply for 2016 IVP visits is December 31, 2014. Find more information and an application at RSNA.org/IVP.
2015 RSNA Membership Renewal Underway

RSNA membership renewal for 2015 is underway. Renew online at RSNA.org/renew or by mail with the invoice sent in early October.

As they renew membership for 2015, members can opt for automatic membership renewal. On or about October 1 of each year (starting with renewal for 2016), RSNA will charge the designated credit card for annual membership dues based on the level of membership at the time of renewal, journal format choice, and specified donation amounts. Check the box on the payment page and fill in credit card information when renewing online, or check the “Automatic Renewal” box when completing credit card information on the print membership invoice. For more information, contact membership@rsna.org.

Kushner Honored

David C. Kushner, M.D., was awarded the gold medal of the Society for Pediatric Radiology (SPR). Dr. Kushner is the chairman of Medical Center Radiologists, Inc. Dr. Kushner helped launch SPR’s Campaign for Children. He is a member of the RSNA Public Information Advisors Network.

Mosher Named Chair at Penn State Medical Center

Timothy J. Mosher, M.D., has been named the Kenneth L. Miller Chair of the Department of Radiology at Penn State Milton S. Hershey Medical Center. Dr. Mosher previously served as vice-chair and professor for radiology research, chief of the Division of Musculoskeletal Radiology and chief of the MRI Clinical Service Unit at Penn State Hershey. Dr. Mosher joined the faculty at Penn State Hershey in 1996. He was recognized by Penn State with the Distinguished Professor Award in 2010.

Dr. Mosher’s research has focused on developing and applying quantitative MR imaging techniques to the study of osteoarthritis and cartilage injury. He currently serves as an associate editor for Radiology and Osteoarthritis and Cartilage and as deputy editor for Magnetic Resonance in Medicine. Dr. Mosher received a Carestream Health/RSNA Research Scholar Grant from the Research & Education Foundation in 1997 for research on early cartilage degeneration.

CORRECTION

1941 President W. Walter Wasson, M.D., shown here, helped create the RSNA Memorial Fund Lecture in 1956. An announcement about the lecture in the Centennial Snapshots section of the July 2014 issue of RSNA News was accompanied by a photo of 1928 RSNA President Edwin C. Ernst, M.D.

IN MEMORIAM

Anne C. Brower, M.D.

Anne C. Brower, M.D., an acclaimed authority on bone radiology and author of the seminal medical textbook Arthritis in Black and White, died Oct. 29, 2013. She was 75.

Along with being a respected physician, Dr. Brower became an ordained Episcopal priest in 2001. Born and reared in New Jersey, she graduated from Columbia University’s College of Physicians and Surgeons in 1964 after earning a bachelor of science at Smith College. She taught for a decade at the Uniformed Services University of the Health Sciences in Bethesda, Maryland, and also served on the physician teams for five U.S. presidents (Richard Nixon, Gerald Ford, Jimmy Carter, Ronald Reagan and George H.W. Bush). In 1993, she was appointed chair of the radiology department at Eastern Virginia Medical School (EVMC), the first woman in the nation to hold such a position.

She remained there until 1998 when she entered the Episcopal seminary in Alexandria, Virginia. In honor of her contributions to radiology, EVMC established a perpetual endowed lectureship, “The Reverend Anne C. Brower, M.D. Lectureship in Musculoskeletal Radiology,” with her permission just before her death.

Dr. Brower gained fame among skeletal radiologists, rheumatologists, emergency room personnel and medical-school professors as the co-author of Arthritis in Black and White, a pioneering, easy-to-use textbook treasured by medical personnel interpreting X-ray images of the body’s many types of arthritis. The book, which is available in an expanded third edition, remains a vital piece of many radiology school curriculums.

In 1997, the American Association for Women Radiologists presented Dr. Brower with its Marie Curie Award.
Celebrating Radiology’s Legacy of Imaging

The RSNA Centennial provided the editorial group the opportunity to revisit the legacy of imaging research published in Radiology since the journal began publishing in 1923. Our offerings will be presented at the RSNA annual meeting and/or featured throughout the year in our journal. The offerings will be more fully described in a January 2015 editorial, but here are some highlights:

“Cases of the Century” is a fun interactive exhibit for annual meeting participants with classic images from old journal articles and questions regarding diagnosis and history.

For our “Golden Oldies” feature, we asked our editorial board and luminaries in imaging to choose what they felt were pivotal articles published in Radiology. During the centennial year, 15 of these will be highlighted with short summaries and links each month in the online journal. We will include images from past issues as “cover art” to grace the front of our journal. Looking through our history I was struck by the beauty of many classic plain film images in the Legacy Collection and some of these will be featured in an illustrated editorial in the January issue.

“Radiology: The Evolution of Radiologic Science” is a special issue featuring review articles, podcasts and self-assessment CME, highlighting research in our journal that show how technology has changed and dramatically improved our ability to diagnose and care for patients.

In each of these initiatives we viewed the legacy of Radiology and noted the development of not just imaging technology, but also our ability to report on imaging research. Early manuscripts were descriptive and often informal discourses on topics of interest. Over time, the science and statistics behind the results advanced along with the technology they describe. While developing the Centennial features required a substantial amount of time and effort, it was a labor of love, as it reacquainted us with our roots in imaging research. We look forward to sharing these highlights as we celebrate RSNA’s Centennial.

Deborah Levine, M.D., is co-chief of ultrasound and director of obstetric & gynecologic ultrasound at Beth Israel Deaconess Medical Center, and associate chief for academic affairs and professor of radiology at Harvard Medical School. Dr. Levine is the senior deputy editor of Radiology.

Editor’s Note

Talk To Us!

Did you know that RSNA now invites readers to leave comments at the end of RSNA News articles posted online? Our stories tell you what we know and think about the latest in radiology and RSNA programs and services; we want to know what you think, too. Visit RSNA News stories online to make observations, ask questions, answer other readers’ questions and/or simply let us know what you think of the topics we’re selecting for RSNA News. We value your opinion.

My Turn

Get more of this month’s news online at RSNA.org/News. Enjoy interactive features including video, audio, slide presentations and more. Go online to leave us a comment and easily share stories via social media as well.

As part of the RSNA News feature on the RSNA Centennial, readers are invited to visit RSNA.org/News to view interactive content on RSNA’s Centennial website featuring an interactive timeline including RSNA milestones, the RSNA Image Contest and the Centennial Showcase—an onsite experience that lets attendees see, hear and discover the advancements that shaped radiology.
As RSNA convenes its 100th annual meeting in an era of increasing globalization, the Society is pleased to highlight two countries as part of the international “Country Presents” series.

This year, the RSNA “Country Presents” sessions spotlight Canada and the Republic of Korea. Both countries are focusing on cardiovascular imaging, including cutting-edge research on the hottest topics in heart and vascular medicine. Each 90-minute scientific session—Korea on Monday, Dec. 1, and Canada on Tuesday, Dec. 2—features presentations by the country’s top researchers.

“Because our meeting has become the hub for the international exchange of medical imaging science and education, we chose to expand the ‘Country Presents’ honor to two countries,” said James P. Borgstede, M.D., RSNA Board Liaison for International Affairs. “This will help us grow our relationship with these countries and allow our attendees to learn more about radiology around the world.”

“Canada has been a longstanding partner that we wanted to honor during our 100th meeting,” said N. Reed Dunnick, M.D., 2014 RSNA President. “We chose to highlight the Republic of Korea for their consistent and growing contributions to our community.”

The “Korea Presents” session, “Exploring Evidence in Cardiovascular Imaging,” will explore the imaging assessment of cardiovascular risk factors in stroke, coronary CT screening angiography, and the results of a multicenter trial comparing CT stress perfusion imaging to fractional flow reserve imaging for assessing ischemic heart disease.

The program will feature two lectures, each followed by a discussion period moderated by KSR President Tae-Hwan Lim, M.D., Ph.D., and Arthur Stillman, M.D., director of cardiothoracic imaging, Department of Radiology, Emory University School of Medicine.

“As a leading international radiological society, RSNA has been a source of motivation and offers an opportunity for globalization for KSR and its members,” Dr. Lee said.

KOREA PRESENTS: “EXPLORING EVIDENCE IN CARDIOVASCULAR IMAGING”
Monday, Dec. 1, 10:30 a.m. - 12 p.m.

- Opening Remarks: 2014 RSNA President N. Reed Dunnick, M.D., and KSR President Tae-Hwan Lim, M.D., Ph.D.
- “Is Screening of Coronary Heart Disease with Coronary CT Angiography (CTA) Necessary? Coronary CTA in Asymptomatic Patients,” Sang Il Choi, M.D.
- “Is CT Stress Perfusion Comparable to FFR in Assessing Ischemic Heart Disease? Multicenter Trial PERFUSE,” Byoung Wook Choi, M.D., Ph.D.
- Closing Remarks: James P. Borgstede, M.D., RSNA Board Liaison for International Affairs, and Byung-Ihn Choi, M.D., Ph.D., Korean Society of Radiology Director at Large.

Republic of Korea, RSNA Continue Collaboration

The Republic of Korea has built its relationship with RSNA gradually over the years, beginning in 1956 when the only South Korean radiologists attending RSNA were residents working in U.S. hospitals.

In the 1990s, the country’s radiologists began presenting at the annual meeting and hundreds more were attending each year. More recently, the Republic of Korea has ranked in the top 10 for attendance and in the number of abstracts accepted to RSNA.

“RSNA offers a good chance to enjoy other researchers’ presentations and new results,” said Jongmin Lee, M.D., Ph.D., international liaison for the Korean Society of Radiology (KSR). “When we come back from the meeting, we usually have a wish list for further research as well as new knowledge and expanded networks.”

2014 is also a milestone for KSR, which is celebrating its 70th anniversary this year. Radiology and the society play a significant role in Korea’s highly ranked healthcare system, said Dr. Lee, of the Department of Radiology at Kyungpook National University Hospital in Daegu.

According to Dr. Lee, the country’s 3,465 board-certified radiologists are responding to increased demand for medical imaging—a trend he expects to continue. The increase is good news for hospitals and the KSR. “Our patients tend to require more objective evidence for their medical problems,” Dr. Lee said.

Dr. Lee credits RSNA with giving Korean radiologists an opportunity to collaborate with researchers from around the world and participate in international, multicenter research studies.
Canadian Radiologists Connect with RSNA

For Jacques Levesque, M.D., president of the Canadian Association of Radiology (CAR), RSNA 2014 is the 26th consecutive RSNA annual meeting he has attended.

“[I] never miss [the annual meeting], for many reasons,” said Dr. Levesque, director and general manager of University Clinics in Quebec City. “The biggest players in the industry are there and the scientific presentations are exceptional. At the end of every year, RSNA is the place to be.”

Many Canadian radiologists share his sentiment. For many years, Canada has sent the largest international contingent to RSNA, with more than 1,000 Canadians attending each year. Those numbers demonstrate the strong relationship that exists between American and Canadian radiologists, Dr. Levesque said. “We are very proud to be chosen for ‘Canada Presents,’ especially in RSNA’s centennial year,” he said. “I think it’s an indication of how closely our two societies have worked together.”

To identify speakers and topics for the session, moderators Bruce B. Forster, M.D., and Jonathon A. Leipsic, M.D., queried Canada’s academic centers for nominations of cutting-edge, peer-reviewed research papers. “We asked for research with a practical side, so that attendees will be able to walk away from the session with ideas they can immediately use in their practices,” said Dr. Forster, professor and head of the Department of Radiology at the University of British Columbia.

When several outstanding cardiovascular papers emerged from the submissions, organizers saw an opportunity to offer a cohesive program featuring researchers from many of the country’s provinces. The session, “Beyond Diagnosis: How Cardiovascular Imaging Research in Canada is Improving Clinical Outcomes,” will offer six presentations followed by a group discussion.

“We hope to stimulate a highly interactive discussion amongst the speakers and the audience,” Dr. Forster said. “We want this to be a two-way communication session.”

Canada Presents will kick off with a professionally produced, five-minute video on what it means to be Canadian—and how being Canadian shapes the researcher’s approach. “There will be some humor to it because Canadians are known for being a little funny,” Dr. Forster said. “You can hear research presentations in any room at RSNA. The video is our way of making our session distinctive.”

MARY HENDERSON is a writer based in Bloomington, Ind., specializing in health and medicine.

CANADA PRESENTS—“BEYOND DIAGNOSIS: HOW CARDIOVASCULAR IMAGING RESEARCH IN CANADA IS IMPROVING CLINICAL OUTCOMES”

Tuesday, Dec. 2, 10:30 a.m. - 12 p.m.

- Opening Remarks: 2014 RSNA President N. Reed Dunnick, M.D.

- “The Impact of Integration of a Multidetector CT Annulus Area Sizing Algorithm on Outcomes of Transcatheter Aortic Valve Replacement: A Prospective, Multicenter, Controlled Trial,” Jonathon A. Leipsic, M.D., Vancouver

- “Refining the Phenotype of Genetic Hypertrophic Cardiomyopathy with Cardiac MRI,” Andrew M. Crean, M.D., Toronto


- “Fast and Furious: Imaging to Recanalization in Acute Stroke,” Mayank Goyal, M.D., Calgary

- “Prevalence of Extracranial Venous Narrowing on Catheter Venography in People with Multiple Sclerosis, Their Siblings, and Unrelated Healthy Controls: A Blinded, Case-control Study,” Darren Klass, M.D., Ph.D., Vancouver

- Closing Remarks: James P. Borgstede, M.D., RSNA Board Liaison for International Affairs

Learn more about the “Presents” Sessions

Go to RSNA.org/KoreaPresents and RSNA.org/CanadaPresents to see lists of exhibitors from the featured countries, get more details about the scientific presentations and find out about activities in the RSNA Global Connection booth during RSNA 2014.
RSNA 2014 is a Historic Celebration

BY EVONNE ACEVEDO JOHNSON

From its modest origins to its present-day global community of professionals around the world, RSNA has been inextricably linked with the evolution of radiology over the last century. During the Society’s 100th annual meeting this year, the RSNA community is invited to celebrate this historic milestone with a Centennial celebration destined to make history of its own.

“This is a two-year celebration,” said Ronald L. Arenson, M.D., RSNA president-elect and co-chair of the RSNA Centennial Committee. “RSNA 2014 is our 100th annual meeting, and in 2015 we will celebrate the founding of the Society itself. We wanted to encompass all the facets of RSNA’s influence and evolution over the years. I am so pleased with the exciting activities we have planned for our community.”

“As we celebrate the past, we will also look to the future,” added 2014 RSNA President N. Reed Dunnick, M.D., who co-chairs the Centennial Committee with Dr. Arenson. “I invite all attendees to sign the Memory Book at RSNA 2014. It will give you a place to leave your mark, congratulate your society—and yourselves—on ‘A Century of Transforming Medicine,’ and give your predictions for the next hundred years.”

RSNA Fills Necessary Niche

To grasp the magnitude of RSNA’s first 100 years, “I think you have to go back to the origins of radiology in the early 20th century,” said M. Paul Capp, M.D., a retired pediatric radiologist who chaired the RSNA Scientific Exhibits Committee from 1975 to 1978.

“At the turn of the century there were just a few radiologists, and it was pretty much a confined community,” Dr. Capp said. “They didn’t have CT scans or MR or ultrasound; they just had plain, old-fashioned images on glass plates, and all they could image then was chest and bones.”

After Wilhelm Roentgen’s historic discovery in 1895, physicians began looking to X-rays as a means to facilitate diagnoses and spare their patients the trauma of surgery. But the science wasn’t accepted overnight. In 1899, when Boston internist Francis Williams, M.D., presented research on the value of X-rays in diagnosing lung and heart diseases, even respected physicians expressed skepticism. After one such presentation, renowned clinical medicine professor F.C. Shattuck, M.D., reportedly said, “Frank Williams has shown you plates and tells you that the heart is here and that the lung is here.

As with all of radiology, RSNA’s beginnings grew from the discovery of the X-ray by Wilhelm Roentgen (2) in 1895, who took his first medical X-ray of his wife’s hand (1). Almost 20 years later, a meeting of five radiologists led to the founding of the Western Roentgen Ray Society, predecessor to RSNA. The RSNA meeting which eventually began exhibiting X-ray equipment such as the original “Snook” X-ray apparatus (3) and grew to include banquets such as this 1937 gathering at the Palmer House in Chicago (4), which began hosting RSNA meetings in 1933. (5) RSNA’s first president, Fred S. O’Hara, M.D.
Now, I can’t see a thing in these plates and, to be truthful, I don’t think he can.”

Physicians with faith in the medical potential of X-rays recognized the need for legitimacy, and in 1900 formed the American Roentgen Ray Society (ARRS). ARRS held its first annual meeting in New York City that year.

As time went on, many radiologists outside the East Coast found traveling to the ARRS annual meeting prohibitive. As a result, two decades after Roentgen’s discovery, five individuals convened to create an independent, regional radiologic society based in the central part of the U.S.

Edwin C. Ernst, M.D., of St. Louis, gathered local colleagues Miles B. Titterington, M.D., and Gray C. Briggs, M.D., in his office. Fred S. O’Hara, M.D., who later became RSNA’s first president, made the 100-mile trip from Springfield, Illinois. The group enlisted the support of George W. Brady, a manufacturer and salesman of X-ray equipment and accessories who offered insight into costs and hospital relations.

Benjamin H. Orndoff, M.D., who served as RSNA’s president in 1918, wrote that the professional organization was unique because it was “constructed on democratic principles and dedicated to the study and practical application of [radiology].”

The new organization was named the Western Roentgen Society. Founders developed a roster of 62 charter members who sent annual dues of $10 and planned a meeting for December 15 and 16, 1915, at the Hotel Sherman in downtown Chicago. Thirty charter members attended, representing 17 states.

The Society developed quickly. Four years later, RSNA membership topped 500 and 19 commercial exhibitors had demonstrated their X-ray technology at the annual meeting. While founders had laid a firm foundation for success, they recognized that “Western” was regionally limiting and “radiology” more all-encompassing. In 1919, the Society elected to rename the organization the Radiological Society of North America.

“In those days, there were no radiologists, really—most people were engaged in other areas of medicine and practiced radiology as a sideline,” said Michael S. Huckman, M.D., an emeritus professor of radiology at Rush University Medical Center in Chicago and longtime RSNA member. “RSNA brought them together and created radiology as a specialty.”

“RSNA did something very unique back in those days,” Dr. Capp said. “Its members understood that radiology was not just radiologists—a team approach was needed, encompassing the entire field. They opened the umbrella to include technologists, physicists, administrators . . . and invited industry to come in and show its products.”

The Society as Convener

Over the decades, as medical imaging advancements surged, RSNA became known as the convener for new science, education and technology in radiology. Launched in 1923, the journal Radiology became the first choice for authors to publish their latest science. The journal RadioGraphics, founded in 1981, was dedicated to continuing education in radiology. RSNA was granted permission to award CME for some activities beginning in 1974.

All along, the RSNA annual meeting—held in locations throughout the country, from Cleveland to San Francisco, before settling in Chicago in 1985—became one of the specialty’s not-to-be-missed events.

“The annual RSNA meeting was unique because every year it offered outstanding presentations of the best scientific research in radiology combined with an extensive portfolio of educational material including refresher courses, plenary sessions and educational exhibits,” said 2008 RSNA President Theresa C. McLoud, M.D., vice-chair of education in the Department of Radiology at Massachusetts General Hospital, Boston. “The technical exhibits area was the largest of its kind in the world. It allowed radiologists to compare and contrast new imaging devices and equipment, facilitating the acquisition of new technologies.”

RSNA also recognized the significance of global partnerships and the contributions that international professionals bring to the forum, Dr. Capp said. “Members went to other countries and invited them to be part of their team,” he explained. International professionals from nearly 130 countries now represent more than a third of RSNA annual meeting attendees, and the journals Radiology and RadioGraphics receive more international submissions than ever before.

Continued on next page
“The one thing that kept it all together was RSNA,” said the late David H. Hussey, M.D., who served as 2005 RSNA President. In a 2012 video interview, Dr. Hussey recalled the role RSNA played in maintaining a community for radiologists of all subspecialties, including his own, radiation oncology. “There is always a danger, as you develop all these subspecialties, of the field fragmenting,” Dr. Hussey said. “We’re now at a focal point, where radiation oncology and diagnostic radiology are coming closer than ever.”

RSNA’s meetings and journals were an essential early platform for CT imaging—a development that changed the specialty forever, according to William R. Hendee, Ph.D., emeritus distinguished professor of radiology, radiation oncology, biophysics and bioethics at the Medical College of Wisconsin in Milwaukee, emeritus professor of radiology at the University of Colorado and a longtime RSNA volunteer.

“The first introduction of CT scanners by the British company EMI was made at the RSNA annual meeting,” Dr. Hendee said. “That was the first public viewing of CT. Ever since, RSNA has offered a showcase for advances in CT technology and will continue that role into the future.”

**Centennial Showcase Shines**

RSNA meeting attendees who want to review and relive the Society’s history—in tandem with the evolution of the specialty itself—will have that opportunity through the RSNA 2014 Centennial Showcase. Featuring an introduction by a virtual Wilhelm Roentgen, the multi-faceted experience lets attendees see, hear and discover the advancements that shaped radiology and RSNA.

“I am especially excited about the Centennial Showcase, which will feature historic science, education and technology, and Cases of the Century, which allow attendees to try their hand at diagnosing ‘vintage’ images using no more than the tools radiologists of the past had at hand,” Dr. Arenson said. “To honor the technological advancements that have been showcased at the RSNA annual meeting for the past hundred years, the RSNA 2014 Technical Exhibits will open with a special ceremony, hosted by leaders in the radiologic industry,” Dr. Dunnick said.

As they reflect on the past 100 years, RSNA members are also looking to the future of the specialty and offering a few predictions.

“There will be a huge emphasis on molecular imaging,” Dr. Capp said. “We will be able to do things pathologically, histologically, that we certainly cannot do now. There will be screening techniques using ultrafine molecular and sub-molecular atomic imaging.”

EVONNE ACEVEDO JOHNSON is a Goliad, Texas-based freelance writer specializing in healthcare issues.
Don’t Miss the Celebration of a Century
RSNA is celebrating the 100th anniversary of its annual meeting in 2014 and the 100th anniversary of the Society itself in 2015. Explore a host of live and virtual features and activities to mark this historic event, including:

**Centennial Showcase**
*Lakeside Center, Hall D*
Explore an onsite experience to discover the advancements that shaped radiology and RSNA. The Centennial Showcase will feature a historical timeline, special welcome from a virtual Wilhelm Roentgen, Cases of the Century and more.

**Centennial Website—Explore the Evolution of Radiology**
As RSNA gears up for its 100th annual meeting, the society has unveiled a fun, interactive way to lend your voice and participate in our once-in-a-lifetime Centennial celebration. Go to [RSNA.org/Centennial](http://RSNA.org/Centennial) to explore radiology milestones and share your own story on our interactive timeline.

**Sip & Savor Social**
*Wednesday, December 3, 5:00 – 7:00 p.m. Skyline Ballroom, 3rd Floor McCormick Place, West Building*
Enjoy drinks, entertainment and tastings by some of Chicago’s top restaurants (view the full list in the 2014 Dining Guide on Page 42). The Chicago-based Matt Stedman Band will perform. Don’t miss the celebration of the century. Add tickets to your registration for only $40 per person.

**Technical Exhibits Grand Opening Ceremony**
*Sunday, November 30, 11:00 a.m.*
The technical exhibits will open with a ceremony where leaders and industry partners will celebrate a century of the technology and innovation that changed the world of radiology.

**X-ray Art by Arie van’t Reit**
*Booth 3965, South Hall, Building A*
View 30 X-ray photographs created by Arie van’t Riet, a Dutch radiation physicist who turned the traditional way of using X-ray imagery on its head. He accidentally became an artist by using X-ray imagery to capture natural life-processes.

**Wilhelm Roentgen Laboratory**
*Booth 7950, North Hall, Building B*
Visitors are invited to take center stage and be part of Wilhelm Roentgen’s laboratory. Pose with a life-size Wilhelm against an enlarged image of his recreated laboratory at the University of Wurzburg.

**Centennial-themed Items Featured at RSNA Store**
The RSNA Store will feature a supply of Centennial-themed items. Located in RSNA Services, the Store will also feature education products including refresher course USBs and *RadioGraphics* special issues, RSNA Mobile CME products and RSNA-branded merchandise and apparel.
RSNA R&E Foundation Announces 2014 Grant Recipients

The RSNA Research & Education (R&E) Foundation funded 94 grants totaling $3.6 million. This represents a 25 percent funding rate and the highest amount ever awarded by the Foundation. The Foundation’s Board of Trustees thanks the Vanguard companies, individuals and private practices whose generous contributions have made the following grants possible.

### RESEARCH SCHOLAR GRANT

**Stephen R. Bowen, Ph.D.**
University of Washington
Multimodality Quantitative Molecular Imaging for Personalized Radiation Therapy of Lung Cancer Through Differential Tumor Dose Escalation and Functional Lung Avoidance

**James Ernest Hansen, M.D.**
Yale School of Medicine
Targeting Glioblastoma with a Lupus Autoantibody

**Wolf E. Heberlein, M.D.**
University of Arkansas for Medical Sciences
IRE-based Multi-modality Loco-regional Tumor Therapy for Pancreatic Cancer

**Charles Y. Kim, M.D.**
Duke University Medical Center
Trans-arterial Embolization of Hypervascular Liver Tumors with Electrically Conductive Particles for Modulation of Percutaneous Radiofrequency Ablation Zone Size and Configuration

**Tae Kim, Ph.D.**
University of Pittsburgh
Magnetic Resonance Imaging of Early Biomarker for Hypertension-induced Cerebrovascular Alterations

**Michael A. Ohliger, M.D., Ph.D.**
University of California, San Francisco
Non-invasive Monitoring of Liver Inflammation and Fibrosis Using Hyperpolarized Carbon-13 MRI

**Sean Sung hun Park, M.D., Ph.D.**
Mayo Clinic, Rochester
11C-Choline PET/CT Image-Guided Stereotactic Ablative Radiotherapy (IIG-SABR) in Oligometastatic Prostate Cancer

**Habib Rahbar, M.D.**
University of Washington
Improving Treatment Outcomes of Ductal Carcinoma in Situ with Breast MRI

**Haris Iqbal Sair, M.D.**
The Johns Hopkins University
Intrinsic Language Network Assessed with Resting State Functional Magnetic Resonance Imaging: Potential Role in Presurgical Mapping

**Atul Bhanudas Shinagare, M.D.**
Brigham and Women’s Hospital, Harvard Medical School
Optimization of Chest CT Utilization in Patients with Advanced Ovarian Cancer

**Janice S. Sung, M.D.**
Memorial Sloan Kettering Cancer Center
Clinical Utility of Whole Breast Screening Ultrasound in Patients Undergoing Digital Breast Tomosynthesis

**Sarah Beth White, M.D.**
Medical College of Wisconsin
Magnetically Triggered Oxaliplatin Release for the Treatment of Colorectal Liver Metastasis

**Junqian Xu, Ph.D.**
Icahn School of Medicine at Mount Sinai
Development of Whole Spinal Cord Functional Assessment with Multiband Magnetic Resonance Imaging

**Michael M. Zeineh, M.D., Ph.D.**
Stanford University
Multimodal MRI to Detect Brain Injury in Athletes

**Anna E. H. Zavodni, M.D., M.H.Sc.**
Sunnybrook Health Sciences Centre, University of Toronto
CT Myocardial Tissue Characterization: Utility in CTA Bypass Graft Assessment

**Jeff L. Zhang, Ph.D.**
University of Utah
Real-time Monitoring of Renal Hypoxia and Hypoperfusion with Quantitative MRI

### RESEARCH SEED GRANT

**Mohamed Abazeed, M.D., Ph.D.**
Cleveland Clinic
Integrative Radiogenomics and Precision Therapy in Squamous Cell Lung Cancer

**Ayaz Aghayev, M.D.**
Brigham and Women’s Hospital, Harvard Medical School
The Gravitational Gradient in Abdominal Aortic Aneurysms

**Jalal B. Andre, M.D.**
University of Washington
Arterial Spin Labeling – A Novel and Accurate MRI Metric to Predict Clinically Significant Vasospasm Following Aneurysmal Subarachnoid Hemorrhage
PHILIPS

Amy Marie Fowler, M.D., Ph.D.
University of Wisconsin-Madison
Impact of Endocrine-resistant Estrogen Receptor-alpha Variants on [18F] Fluoroestradiol Imaging of Breast Cancer

Brian Andrew Hrycushko, Ph.D., M.S.
The University of Texas Southwestern Medical Center
Local Hypothermia as a Radioprotector During Prostate Stereolactic Body Radiotherapy

Jacob L. Jaremko, M.D., Ph.D.
University of Alberta
3D Ultrasound of Infant Hips: Toward an Understanding of Normal Development and Improved Detection of Hip Dysplasia

Eugene Jon Koay, M.D., Ph.D.
The University of Texas MD Anderson Cancer Center
Predicting Gemcitabine Delivery in Pancreatic Cancer with Principles of Mass Transport

Wen Ling, Ph.D.
University of Pittsburgh
Selective and Quantitative Detection of Proteoglycan in disc by iTIP gagCEST

Gregory Jon Nadolski, M.D.
Hospital of the University of Pennsylvania
Near Infrared Fluorescence Imaging of Matrix-Metalloprotease-2 Activity as a Biomarker of Vascular Remodeling in Hemodialysis Access

Edwin H.G. Ooi, M.D., Ph.D.
Erasmus MC, University Medical Center Rotterdam, Netherlands
Quantitative Dynamic Contrast-enhanced MRI for Studying Bone Perfusion

Akhilesh Keshav Sista, M.D.
Joan and Sanford I. Weill Medical College of Cornell University
Assessment of a Multi-variable Physiologic Profile's Ability to Determine Catheter-directed Thrombolysis Efficacy in Real-time using a Porcine Model of Submassive Pulmonary Embolism

PHILIPS

Joel M. Stein, M.D., Ph.D.
Hospital of the University of Pennsylvania
Glioblastoma Radiosensitization with Polymeric Micelles Containing Gold and Iron Oxide Nanoparticles

Aida Lui Tam, M.D.
The University of Texas MD Anderson Cancer Center
Developing an Electroporation and Nanoparticle-based Therapeutic Platform for Bone Metastases: Evaluation of Local Delivery Strategies to Optimize Intratumoral Nanoparticle Uptake

Tokihiro Yamamoto, Ph.D.
University of California, Davis
CT-based Pulmonary Gas Exchange Imaging for Personalized Radiotherapy

PHILIPS

Hamza Alizai, M.D.
Resident at The University of Texas Health Science Center at San Antonio
Research conducted at New York University School of Medicine
Identification of Novel Biomarkers of Bone Strength and Fracture Risk via High Resolution, High Field MRI

Jacob D. Brown, M.D., Ph.D.
University of California, San Francisco
A Novel Image-guided Pain Treatment: Selective Deletion of Nociceptors by Intraganglionic Injection of Resiniferatoxin

Joseph Robert Evans, M.D., Ph.D.
University of Michigan
Investigating the Role of SCHLAP1, a Novel Long Noncoding RNA, in Prostate Cancer Radioresistance

Matthew G. Geeslin, M.D., M.S.
University of Virginia
Evaluation of Spiral-based 3D MR Thermometry for Brain Applications of MR-guided Focused Ultrasound in a Porcine Model

TOSHIBA

Leading innovation

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Christopher Maroules, M.D.
The University of Texas Southwestern Medical Center
Quantification of Volumetric Pulmonary Perfusion Using 3D Arterial Spin Labeled Perfusion MRI: Feasibility and Evaluation in Pulmonary Arterial Hypertension

Prince Research Resident Grant

Nina Nabavizadeh, M.D.
Oregon Health & Science University Noninvasive, In Vivo Contrast-enhanced Ultrasound and Molecular Imaging of Early Microvascular Changes Following High-dose Radiation Therapy

Kazim Narsinh, M.D.
University of California, San Diego MRI Tracking of Cellular Immunotherapy using Natural Killer Cells and Perfluorocarbon Tracers

Kristin Kelly Porter, M.D., Ph.D.
The Johns Hopkins University Application of 4D Phase Contrast MRI as a Non-invasive Measure of Treatment Response in Patients with Pulmonary Hypertension

James Spencer Clayton Ronald, M.D., Ph.D.
Duke University Medical Center Identification of Novel Alternative Splicing Biomarkers of Hypoxia in Breast and Lung Tumors

James Eric Schmitt, M.D., Ph.D.
Hospital of the University of Pennsylvania Imaging Genomic Analysis of the 22q11 Deletion Syndrome

Jennifer Elaine Soun, M.D.
Columbia University Medical Center Quantitative T1rho Mapping in Multiple Sclerosis: Development of a Potential Novel Biomarker for Disease Prognostication and Management

Peter Christian Thurlow, M.D.
Allegheny General Hospital and the University of Wisconsin Evaluating the Effect of Foot Strike Biomechanics on MR Imaging of the Knee using a Novel Multi-component T2 Mapping Sequence

Jordan Torok, M.D.
Duke University Medical Center Modulation of Endothelial Cell Radiation Sensitivity and Lung Tumor Response to Radiation Therapy

Behroze Vachha, M.D., Ph.D.
Massachusetts General Hospital, Harvard Medical School Task-free Presurgical Mapping of Eloquent Cortex using fMRI at Ultrahigh Field Strength (7T) MRI in Patients with Medically Refractory Epilepsy

Silver Anniversary Campaign Pacesetters Research Fellow Grant

Michael C. Veronesi, M.D., Ph.D.
University of Chicago In Vivo Fate Mapping of Magnetic Nanoparticles in the Brain Following Intranasal Administration using MRI

Alexander Michael Vezederis, M.D., Ph.D.
University of California, San Diego In Vivo Ultrasound Imaging and Diagnosis of Implanted Medical Device-related Infections using Microbubbles Targeted to Biofilm

RSNA Presidents Circle Research Resident Grant

John-Paul J. Yu, M.D., Ph.D.
University of California, San Francisco Combined Biochemical, Genetic, and Metabolomic Efforts Towards Neuroimaging Schizophrenia and Psychiatric Disease

Chi Zhang, M.D., Ph.D.
Columbia University Medical Center Studies on the Effects of Combined Treatment with Metformin and a Dual mTOR1/2 Inhibitor, AZD8055, in Tumor Control of Glioblastomas

RESEARCH MEDICAL STUDENT GRANT

Daniel Arteaga, B.A.
Vanderbilt University Characterizing Perfusion Territory Dynamics and Vessel Wall Morphology in Patients at Risk for Stroke

Jamaal Benjamin, Ph.D.
The University of Texas Southwestern Medical Center Enhancing Prognostic value of Computed Tomography (CT) Enterography in IBD Diagnosis

Wilfred Dang, B.H.Sc.
University of Ottawa What is a Good Quality History and How Does it Affect Accuracy of Interpretation of Acute Abdominal CT?

Samantha Delapena, B.S.
University of Southern California Keck School of Medicine Contrast Enhanced Ultrasound for Evaluating Antiangiogenic Treatment in Hepatocellular Carcinoma

Philips Healthcare/RSNA Research Medical Student Grant

Adnan Elhammali, B.S.
Washington University Metabolic Rewiring in PI3K Activated Cervical Cancer

Edward M. Lawrence, B.S.
Enrolled at Albert Einstein College of Medicine Research conducted at Memorial Sloan-Kettering Cancer Center Establishing Tumor Heterogeneity in Patients with Metastatic High-grade Serous Ovarian Cancer (HGSOC): Correlating In Vivo Imaging Phenotypes with Histopathology and Immunohistochemistry

Boshen Liu, B.S.
University of Mississippi Medical Center Rapid Bone Density Screening of Routine CT Images using Color Enhanced Detection (CED)

Tara Martinez, B.S., R.N.
University of Mississippi Medical Center Use of a Phantom to Develop Imaging Protocols to Quantify Liver Surface Nodularity on CT Images from Multiple Different CT Scanners

Gwendolyn J. McGinnis, B.S.
Oregon Health & Science University Suppression of the T cell Response and Enhancement of Detrimental Effects of Radiation on the Brain

Kelly Michaelson, Ph.D.
Geisel School of Medicine at Dartmouth College Comparing X-ray and Optical Imaging for Breast Density Determination

Leslie A. Modlin, B.A.
Stanford University School of Medicine Circulating Tumor DNA as a Novel Biomarker for Metabolic Tumor Volume in Non-Small Cell Lung Cancer

Megha Nayyar, B.A.
University of Southern California Keck School of Medicine Role of Imaging in Active Surveillance of Renal Masses: A Systematic Review of the Literature

Chulhyun Park, B.S.
University of California, San Diego Medical Center Effects of Intravenous Gadoxetate Disodium and Flip Angle on Hepatic Proton-Density Fat Fraction Estimation with Multi-echo MR Imaging at 3T

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James Yoon, B.A.
University of Southern California Keck School of Medicine
Analysis of 18F NaF PET-CT Tumor Response Assessment of Skeletal Metastases from Prostate Cancer

Chung Yao Yu, B.A.
University of Southern California Keck School of Medicine
Performance of PET Radiotracers in Biochemical Recurrence of Prostate Cancer

Derek Zachman, B.A., M.S.
Oregon Health & Science University
Mechanisms of Endothelial-dependent Hematopoietic Stem Cell Repair Following Ionizing Radiation Injury

Marcus Zuo, B.S.
Medical College of Wisconsin
Cost-effectiveness of Endovascular vs. Open Surgical Repair for Popliteal Artery Aneurysms

Thomas J. Quinn, B.S.
Albert Einstein College of Medicine
Combination Low-Energy High Intensity Focused Ultrasoundography (LOFU) and Radiation Therapy (RT): Preclinical Evaluation of Autologous In Situ Vaccination in a Mouse Model of Spontaneously Metastatic Melanoma

Arif Rashid, B.S.
Enrolled at University of Pittsburgh School of Medicine; Research conducted at Johns Hopkins Hospital
Applying Diffusion Tensor MRI after Radiation Therapy of Pediatric Brain Tumors to Establish Dose Constraints and Predictive Image Biomarkers in the Hippocampus and Periventricular Regions

Julia Talley, B.S.
The University of Texas Health Science Center at Houston
Evaluation of Effects of Electroporation and Gemcitabine Nanoparticle Formulation on Tumoral Response in a Pancreatic Adenocarcinoma Nude Mouse Model

Dmitriy Timerman, B.S.
Massachusetts General Hospital, Harvard Medical School
Quantitative Multimodal Analysis of Brain Structure and Metabolism in the Region of Developmental Venous Anomalies

Justin R. Tse, B.S.
University of California, Los Angeles
Predicting Hepatocellular Adenoma Subtype with Quantitative and Qualitative MRI Features

Shri Vyas, B.A.
Duke University School of Medicine
Characterization of Early Anti-Angiogenesis Treatment Effects in Colorectal Carcinoma Using High-Resolution Dynamic Contrast-Enhanced Ultrasound and Magnetic Resonance Imaging

David Xu, B.A.
Columbia University College of Physicians & Surgeons
Novel Tirko Sequence for In-Vivo Detection of Lumbar Intervertebral Disc Changes with Axial Load

Anders Persson, M.D., Ph.D.
Linköping University, Sweden
RadSim: Simulation Based Training Program for CT Protocol, Iterative Reconstruction and Dual Energy Applications

Sonia Marie-Aurore Pujol, Ph.D.
Brigham and Women’s Hospital, Harvard Medical School
Interactive Tutorial for Teaching Radiologic Anatomy and its Variations

Sarah Carlson Shaves, M.D.
Eastern Virginia Medical School
Redefining the Radiology Curriculum in Medical School: Vertical Integration and Global Accessibility

GE Healthcare

Rathan M. Subramaniam, M.D., Ph.D.
The Johns Hopkins University
Curriculum Development for Hybrid Molecular Imaging and Evidence Based Clinical Practice

Philips

Jonathon A. Nye, Ph.D.
Emory University School of Medicine
Problem-based Educational Material for Medical Physics Residency Training

Dominique Penninck, D.V.M., Ph.D.
Cummings School of Veterinary Medicine at Tufts University
The Development of Video-based Clinical Ultrasound Teaching Tools and the Construction of a Web-based Educational Program

Canon
RSNA R&E Foundation Announces Recipients of the 2014 Roentgen Resident/Fellow Research Award

The RSNA Research & Education (R&E) Foundation presented the 2014 Roentgen Resident/Fellow Research Award to 161 residents and fellows throughout North America. This prestigious and competitive award recognizes trainees who have made significant contributions to their departments’ research efforts as evidenced by:

- Presentations of scientific papers at regional or national meetings
- Publication of scientific papers in peer-reviewed journals
- Receipt of a research grant or contributions to the success of a research program within the department
- Other research activities

Geraldine Abbey-Mensah, M.D.
SUNY Downstate Medical Center

Abdullah Alabousi, M.D.
McMaster University

Jessica Andreoli, M.D.
McGill University

Wesley Angel, M.D.
Boston University

Karen Buch, M.D.
Atlanta Medical College

Adam Bernheim, M.D.
University of Pennsylvania

Christopher Bailey, D.O.
Wayne State University

Jared H. Bailey, M.D.
Indiana University School of Medicine

Jennifer Berkowitz, M.D.
Hofstra North Shore-LIJ School of Medicine at Hofstra University

Adam Bernheim, M.D.
SUNY Downstate Medical Center

Steve E. Braunstein, M.D., Ph.D.
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Markus Bredei, M.D., Ph.D.
University of Alabama at Birmingham

Karen Buch, M.D.
Boston University

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Dartmouth Hitchcock Medical Center

George A. Carberry, M.D.
University of Wisconsin School of Medicine and Public Health

Sangeeta Chaudhary, M.D.
Geisinger Medical Center

Ammar Chaudhry, M.D.
Stony Brook University

Andrew S. Chi, M.D.
Thomas Jefferson University Hospital

Matthew Chin, M.D.
University of North Carolina at Chapel Hill

Kevin Ching, M.D.
University of Pittsburgh Medical Center

Jason Cox, M.D.
University of Missouri

Edwin F. Crandley, M.D.
University of Virginia

Ryan Cunningham, M.D.
Temple University Hospital

Krishna Das, M.D.
Upstate Medical University

Virginie Demers, M.D.
McGill University

Sumudu Dissanyake, M.D.
University of California, Irvine

Michael Domiello, D.O.
Wayne State University

Anna Ellermeier, M.D.
Rhode Island Hospital/Brown Medical School

Ahmed Fadl, M.D.
Winthrop University Hospital

Jeremy Feldman, M.D.
Hahnemann University School

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Texas Tech University Health Sciences Center, Paul L. Foster School of Medicine

Simon Fung-Kee-Fung, M.D.
Roswell Park Cancer Institute

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Christian Care Health System

Terence Peter Gade, M.D., Ph.D.
University of Pennsylvania

Rakhee Goel, M.D.
Cleveland Clinic

Ajit Goenka, M.D.
Cleveland Clinic

Dmitry Goldin, M.D.
Beaumont Health System

Michael K. Gordon, M.D.
Jackson Memorial Hospital

University of Miami School of Medicine

Joseph R. Grajo, M.D.
University of South Florida Morsani College of Medicine

Lars J. Grimm, M.D.
Duke University

Brian Haas, M.D.
Yale University School of Medicine

Reza Hakimelahi, M.D.
The University of Texas Medical Branch at Galveston

William A. Hall, M.D.
Emory University

Priyanka Handa, M.D.
Jacobi Medical Center

John Hanna, M.D.
Michigan State University Flint Area Medical Education

Kate Hanneman, M.D.
University of Michigan

Adam Hart, M.D.
Memorial University of Newfoundland

Daichi Hayashi, M.B.B.S., Ph.D.
Bridgeport Hospital/Yale New Haven Health

Kuang-Chun Jim Hsieh, M.D.
Tulane University School of Medicine

Ranliang Hu, M.D.
Massachusetts General Hospital

Ichiro Ikuta, M.D., M.M.Sc.
Norwalk Hospital

Prashant Jolepalem, M.D.
Beaumont Health System

Guy C. Jones, M.D.
National Cancer Institute

Almamoon I. Justanah, M.B.B.S.
Lahey Hospital and Medical Center

Vivek Kalia, M.D., M.P.H., M.S.
Fletcher Allen Health Care

Katia Kaplan-List, M.D.
Rochester General Hospital

Madeera Kathpal, D.O.
Rutgers Cancer Insitute of New Jersey

Nasir Khan, M.D.
University of Saskatchewan

John Kim, M.D.
University of Iowa

Sungjuem Kim, M.D., Ph.D.
Moffitt Cancer Center

Abraham Knoll, M.D.
Harlem Hospital Center

Shefali P. Kothary, M.D.
Mount Sinai Beth Israel

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Santa Barbara Cottage Hospital

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Predicting Breast Cancer Response to Endocrine Therapy

Amy Marie Fowler, M.D., Ph.D., a tenure-track Assistant Professor in the Breast Imaging Section at the University of Wisconsin-Madison, is focusing on advancing the use of molecular imaging to improve outcomes for patients with breast cancer. “Molecular imaging holds promise as a noninvasive biomarker assay for guiding treatment decisions and predicting response, as well as for developing new targeted therapies” Dr. Fowler said. “Specifically, I am interested in imaging estrogen and progesterone receptors (ERalpha, PR), which are important tumor biomarkers for assessing prognosis and guiding treatment, using whole body PET/CT and dedicated breast PET devices, to predict response to endocrine therapy and monitor for the development of endocrine resistance.”

With a 2014 Philips Healthcare/RSNA Research Seed Grant, Dr. Fowler will examine how constitutively active forms of ERalpha impact [18F]fluoroestradiol (FES) imaging of ERalpha+ endocrine-resistant breast cancer using a preclinical xenograft model. Elucidation of the molecular mechanisms affecting tumoral FES uptake is critical for appropriate interpretation of FES-PET imaging studies that potentially guide patient treatment decisions.
RSNA Staff Retirement

Earlier this year, RSNA said goodbye to an employee whose quarter century of service included many years in human resources, where she was a familiar face as the Society grew from several dozen to more than 200 employees.

Jeanne Jendra, 26 years

RSNA has grown rapidly in recent years, hiring new employees to handle the expansion of the annual meeting, education offerings and journal content, as well as other products and services for an increasing membership. That these newcomers could immediately feel at home and tend to the Society’s business was in large part due to the friendly welcome they received from Jendra.

Jendra joined RSNA in April 1988 as an administrative assistant in the Society’s Editorial and Publishing Services division and worked as a schedule coordinator and operations manager for the Publications Department. She was also administrative assistant to the executive director and a manager in the Learning Center before becoming Assistant Director of Administration and Human Resources in 1998.

“Jeanne brought an energy to the RSNA that was addicting,” said Mark Lichtenberger, RSNA Director of Administration and Human Resources. “The employees truly enjoyed interacting with her on a daily basis, as she made them feel so at ease with whatever seemed to be on their minds.”
CT and MR imaging play critical roles in diagnosing and staging hepatocellular carcinoma (HCC). Emerging evidence suggests that MR imaging with hepatobiliary agents may be the most sensitive technique for detecting such HCCs.

In the first of a two-part review published in the October issue of *Radiology* (RSNA.org/Radiology), Jin-Young Choi, M.D., of the Research Institute of Radiological Science in Seoul, Korea, Jeong-Min Lee, M.D., of Seoul National University Hospital, and Claude B. Sirlin, M.D., of the University of California, San Diego Medical Center, discuss basic concepts of diagnosis and staging, review the diagnostic performance of CT and MR imaging with extracellular contrast agents and of MR imaging with hepatobiliary contrast agents, and examine in depth the major and ancillary imaging features used in diagnosing and characterizing HCC. The article is the second in a two-part study.

While some single-center comparative studies have shown slightly better performance of dynamic MR imaging using extracellular contrast agents than multiphasic CT, the differences are small. The per-lesion sensitivity of MR imaging for nodular HCC of all sizes is 77 percent to 100 percent, while that of CT is 68 percent to 91 percent. The per-lesion sensitivities, stratified by size, are 100 percent for both modalities for nodular HCCs larger than 2 cm, 44 percent to 47 percent (MR imaging) and 40 percent to 44 percent (CT) for 1- to 2-cm HCCs, and 29 percent to 43 percent (MR imaging) and 10 percent to 33 percent (CT) for HCCs smaller than 1 cm.

Thus, both modalities provide excellent sensitivity for nodular HCCs larger than 2 cm, modest sensitivity for 1- to 2-cm HCCs and poor sensitivity for HCCs smaller than 1 cm, and it is not yet clear which modality is superior.

Ancillary features can be divided into those that favor the diagnosis of HCC specifically (intralesional fat, corona enhancement, nodule-in-nodule architecture, and mosaic architecture) and those that favor the diagnosis of malignancy but are not specific for HCC (mild-moderate T2 hyperintensity, restricted diffusion, and, if other features confirm a solid mass, lesional iron sparing).

“Some ancillary imaging features show promise for predicting tumor grade or microvascular invasion, but independent confirmatory studies are needed to validate these features for these purposes,” the authors write.

This article meets the criteria for AMA PRA Category 1 Credit™. SA-CME is available online only.

Listen to *Radiology* Editor Herbert Y. Kressel, M.D., deputy editors and authors discuss the following articles in the August issue of *Radiology* at pubs.rsna.org/page/radiology/podcasts:


- A joint podcast focuses on two articles on MR imaging in ADHD:
  - “Intrinsic Brain Abnormalities in Attention Deficit Hyperactivity Disorder: A Resting-State Functional MR Imaging Study,” Fei Li, Ph.D., and colleagues.
  - “Multimodal MR Imaging of Brain Iron in Attention Deficit Hyperactivity Disorder: A Non-invasive Biomarker That Responds to Psychostimulant Treatment?” Vitria Adisetiyo, Ph.D., M.S., and colleagues.
RSNA Recognizes Chief Residents

As part of its commitment to support radiologists in every stage of their careers, RSNA takes this time of the year to acknowledge those selected as chief residents.

RSNA recently sent each new chief resident a gift box (right) including a “Chief Resident” mug. RSNA membership is free for residents and fellows and dues are discounted the first two years of practice. Learn more at RSNA.org/Benefits.

MR Imaging-based Assessment of the Female Pelvic Floor

Pelvic floor weakness can provoke a wide range of symptoms, including pain, urinary and fecal incontinence, constipation, difficulty in voiding, a sense of pressure, and sexual dysfunction. When the condition is diagnosed solely on the basis of physical and clinical examination, the compartments involved and the site of prolapse are frequently misidentified. Such errors contribute to a high number of failed interventions.

MR imaging, which allows visualization of all three compartments, has proved a reliable technique for accurate diagnosis, especially when involvement of multiple compartments is suspected.

In an article in the September-October issue of RadioGraphics (RSNA.org/RadioGraphics), Laura García del Salto, M.D., of the Department of Radiology at the Hospital del Henares-Central Radiodiagnostic Unit in Coslada, Spain, and colleagues assess the benefits of MR imaging for examining pelvic floor weakness.

Specifically, the authors:

- Review the pelvic floor anatomy
- Describe the MR imaging protocol used in their institutions
- Survey common MR imaging findings in the presence of pelvic floor weakness
- Highlight key details that radiologists should provide surgeons to ensure effective treatment and improved outcomes.

Over the past decade, MR imaging with dynamic sequences has been proven accurate and reliable for identifying pelvic floor weakness, especially when multiple compartments are involved, because it allows all three compartments to be visualized simultaneously. In addition, ultrasonography has emerged in the past several years as an important diagnostic method.

*MR imaging is an excellent tool for noninvasive evaluation of the pelvic floor. Thin-section MR imaging allows a careful assessment of the ligaments and muscles, and dynamic MR imaging with steady-state sequences may play a complementary role in evaluating functional disorders,* the authors write.

RadioGraphics Monograph Issue Focuses on Cardiothoracic Radiology

Cardiothoracic radiology is the focus of the 2014 RadioGraphics monograph, which will be published in mid-October. The issue, “Cardiothoracic Imaging: Current Practice and Recent Innovations,” covers a broad range of topics, including dose reduction in cardiac CT, the use of multidetector CT in the assessment of valvular disease and transcatheter intervention, cardiac MR imaging, evaluation of the solitary pulmonary nodule and imaging and staging of uncommon primary intrathoracic malignancies.

Guest Editors Robert M. Steiner, M.D., and Jeremy J. Erasmus, M.B., B.Ch.—RadioGraphics’ Editorial Board members specializing in cardiac and thoracic radiology, respectively—solicited the material needed to produce a state-of-the-art resource for radiologists involved in the imaging of cardiac and chest disease. The guest editorial provides an integrative overview of the topics covered and includes an introductory note from RadioGraphics Editor Jeffrey S. Klein, M.D.

Initiated in 1999, the popular annual monograph issues have covered a spectrum of topics across the radiologic subspecialties. The RadioGraphics monographs can be accessed at pubs.rsna.org/page/radiographics/specialissues. Members and subscribers who receive RadioGraphics in print will automatically receive a print copy of the 2014 monograph.
Radiology in Public Focus

A press release was sent to the medical news media for the following article appearing in a recent issue of Radiology.

The Boston Marathon Bombing: After-Action Review of the Brigham and Women’s Hospital Emergency Radiology Response

The surge in imaging utilization after the Boston Marathon bombing stressed the need to analyze emergency radiology operations. Opportunities for improvement in a radiology department’s response to a mass casualty incident (MCI) may be revealed by analyzing relevant activities during the response, including patient arrival, imaging orders, exam completion and exam interpretation with results communication and reporting.

In a retrospective study, John Brunner, M.D., of the Department of Radiology, Emergency Radiology Section, at Brigham and Women’s Hospital (BWH), and colleagues analyzed imaging utilization and emergency radiology process turnaround times for 40 patients in response to the April 15, 2013, Boston Marathon bombing in order to identify opportunities for improvement in the BWH emergency operations plan.

Compared with routine emergency radiology operations, radiographic completion times were lengthened (31 vs. 52 minutes, respectively; \( P < .001 \)) because of the bottleneck created by a single conventional radiography plate reader; CT examination completion times were reduced (72 vs. 37 minutes, respectively; \( P = .001 \)) by availability of three CT scanners with a radiologist stationed at each scanner for protocoling and image review. Dictated report turnaround times did not differ significantly from routine operations, despite the high rate of imaging, because of increased radiologist staffing in response to the MCI.

“An after-action report of a facility’s response to an MCI is a fundamental part of emergency preparedness and quality improvement. Planning should include increased availability of imaging equipment to avoid bottlenecks and reduce examination completion times, and radiologist staffing needs must be anticipated, along with workflow modifications to accommodate prompt communication of imaging findings, with detailed reports to follow the influx,” the authors write.

Senior author Aaron Sodickson, M.D., Ph.D., is interviewed in an October Radiology podcast.

New on RadiologyInfo.org

Visit RadiologyInfo.org, the public information website produced by the RSNA and ACR, to read the latest content posted to the website:

- Diverticulitis:
  RadiologyInfo.org/en/info.cfm?pg=diverticulitis
- Lymphoma:
  RadiologyInfo.org/en/info.cfm?pg=lymphoma

Media Coverage of RSNA

OCTOBER AND NOVEMBER PUBLIC INFORMATION ACTIVITIES
FOCUS ON BREAST AND LUNG CANCER AWARENESS

To highlight National Breast Cancer Awareness Month in October and National Lung Cancer Awareness Month in November, RSNA is distributing public service announcements (PSAs) that focus on the importance of screening and the symptoms, risk factors and possible treatment options related to these cancers.

In addition, the RSNA “60-Second Checkup” audio program focusing on breast cancer awareness for October and lung cancer screening for November will be distributed to nearly 100 radio stations across the country.

Education and Funding Opportunities

Writing a Competitive Grant Proposal

March 6-7, 2015
RSNA Headquarters
Oak Brook, IL

Registration is open for the Writing a Competitive Grant Proposal workshop, designed for researchers in radiology, radiation oncology, nuclear medicine and related sciences who are interested in pursuing federal funding.

Guided by a faculty of leading researchers with extensive experience in all aspects of grant applications and funding, the program will focus on developing specific aims to be included in a grant application. Participants will be provided tools for getting started in the grant writing process and developing realistic expectations. Faculty includes Udo Hoffmann, M.D., M.P.H., and G. Scott Gazelle, M.D., M.P.H., Ph.D., of Massachusetts General Hospital in Boston; Ruth Carlos, M.D., of the University of Michigan Health System in Ann Arbor; and Martin Pomper, M.D., Ph.D., of the Johns Hopkins School of Medicine in Baltimore.

The course fee is $175. Register online at RSNA.org/CGP. Contact Rachel Nelson at 630-368-3742 or rnelson@rsna.org for additional information.

Medical Meetings
October-November 2014

OCTOBER 2-4
European Society of Cardiac Radiology (ESCR), Annual Scientific Meeting, Cité Universite, La Maison Internationale, Paris
• www.escr.org

OCTOBER 8-11
Korean Society of Radiology (KSR), 70th Korean Congress of Radiology, Seoul
• www.kcr4u.org
* Visit the RSNA Booth

OCTOBER 15-18
International Skeletal Society (ISS), 41st Annual Meeting and Musculoskeletal Imaging Course, Edinburgh International Conference Centre, Edinburgh, Scotland
• www.internationalskeletalsociety.com

OCTOBER 16-20
La Société Française de Radiologie (SFR)/French Society of Radiology, Journées Françaises de Radiologie (JFR) 2014/French Days of Radiology 2014, Palais des Congrès, Porte Maillot, Paris
• www.jfrexpo.com
* Visit the RSNA Booth

OCTOBER 17-19
Australasian Society of Ultrasound in Medicine (ASUM), 44th Annual Scientific Meeting, Crown Promenade, Melbourne
• www.asum.com.au

OCTOBER 19-21
Radiology Business Management Association (RBMA), Fall Educational Conference, The Westin Seattle, WA
• www.rbma.org

OCTOBER 22-23
British Institute of Radiology (BIR), Annual Congress, Euston Square, London
• www.bir.org.uk

OCTOBER 24-26
Society of Radiologists in Ultrasound (SRU), 2014 Annual Meeting, Marriott City Center, Denver
• www.sru.org

NOVEMBER 14-18
American Medical Informatics Association (AMIA), Annual Symposium, Washington Hilton Hotel, Wash. D.C.
• www.amia.org/amia2014

FIND MORE EVENTS AT RSNA.org/Calendar.aspx.
Annual Meeting Preview

Medical imaging science, education and technology—RSNA 2014 offers it all. Use this overview of the myriad educational and scientific offerings, technical exhibits and courses—as well as the technologies available to guide you and the amenities that will help you enjoy your Chicago stay—to plan your ideal experience.

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 2014. With full participation in the meeting, each physician can earn up to 93.00 AMA PRA Category 1 Credits™.

RSNA 2014 Offers Exceptional, Diverse Science and Education

As medical imaging continues to rapidly evolve, the robust collection of scientific presentations, education exhibits and courses at RSNA 2014 will help attendees stay at the forefront of the latest discoveries and techniques. The program delivers exciting content for every level of experience—from members-in-training to veteran radiologists.

“The scientific program for RSNA 2014 is going to be exceptional,” said Jon A. Jacobson, M.D., chair of the RSNA Scientific Program Committee. “This year, more than 8,000 high-quality abstracts were submitted, which was an increase from the prior year. In addition, the number of international abstracts has also increased. This has resulted in a diverse selection of timely topics and high-quality research.”

New requirements for abstract submissions led to increased overall quality in the Education Exhibits program for RSNA 2014.

“Registrants will be pleased with the quality as well as the wide range of education exhibits at this year’s annual meeting,” said Isaac R. Francis, M.D., chair of the RSNA Education Exhibits Committee. “The abstracts included new techniques for prostate cancer imaging, CT screening for lung cancer, quantitative and functional imaging, image-guided musculoskeletal interventions, PET/MRI applications in oncology and an exhibit on the introduction of a national RIS/PACS in Ireland.”

RSNA 2014 also promises another excellent educational program including refresher courses, essentials, case-based sessions, controversies, and a Friday imaging symposium on incidentalomas, said Donald P. Frush, M.D., chair of RSNA Refresher Course Committee. “Our offerings are the result of remarkable sculpting by the RSNA staff of the innovative and creative courses designed by the track chairs,” Dr. Frush said.

Themes that will complement conventional topics, Dr. Frush said, will be evident across subspecialties and include emerging technologies, contemporary imaging strategies and current challenges. Educational programs will also focus on evolving trends such as lung cancer screening, global imaging issues and non-interpretive responsibilities including the relevance of information technology in the delivery of high-quality imaging.
“Increasing use of educational enhancements such as audience response technology, RSNA Diagnosis Live™ and SAMs, as well as continued integration of scientific program and other educational material, will amplify the impact of the program content,” Dr. Frush added.

RSNA received 13,485 science and education abstracts to consider for presentation at RSNA 2014—a 3 percent increase from last year. Of those, 2,151 were chosen for education exhibits and 2,703 were chosen for scientific presentations.

**Breast Imaging**
Tomosynthesis screening and diagnostic outcomes are “hot topics” this year, said Scientific Program Breast Subcommittee chair Emily F. Conant, M.D. “The number of high quality abstracts has significantly increased as tomosynthesis is being implemented clinically in breast centers internationally,” Dr. Conant said.

A wide variety of education presentations will appeal to learners on all levels, including radiologic-pathologic correlations of various benign and malignant diseases and case-based and pictorial reviews, said Education Exhibits Breast Subcommittee chair Susan J. Ackerman, M.D. “Topics include updates in multimodality imaging from interventional procedures such as radioactive seed localization, tomosynthesis-guided localizations and imaging pitfalls in dynamic breast MRI,” Dr. Ackerman said.

**Cardiac Radiology**
Interest continues in new techniques for coronary imaging and non-ischemic cardiomyopathies, said Scientific Program Cardiac Subcommittee chair Robert M. Steiner, M.D. He added there is growing interest in technologies such as transcatheter aortic valve implantation or replacement, radiation reduction, and PET/MRI and PET/CT.

The cardiac education exhibits are applicable to all levels of experience, from residents to subspecialists in cardiac imaging, said Dawn D. Teague, M.D., Education Exhibits Cardiac Subcommittee chair. “There is a fair amount of material this year on congenital-related cardiac entities and the management of these abnormalities,” Dr. Teague said. “Quantitative imaging has a bigger focus this year with new quantitative MRI pulse sequences, as well as an interesting first look at spectral imaging with CT.”

**Chest Radiology**
“The hot topic in chest radiology is lung cancer screening—appropriate in light of recent and developing actions by the Centers for Medicare & Medicaid Services (CMS),” said Reginald F. Munden, M.D., D.M.D., Scientific Program Chest Subcommittee chair. Other abstracts pertain to lung nodules and malignancy, Dr. Munden added, and submissions for dual energy/spectral imaging and functional imaging applications for lung disease increase as these technologies become part of the mainstream.

In abstracts for education exhibits, “There was an increased emphasis on early lung cancer detection, specifically looking at ground glass nodules,” said Eric T. Goodman, M.D., the Education Exhibits Chest Subcommittee chair. “Since the U.S. Preventive Services Task Force recommendations supporting lung cancer screening, the radiology community has been ramping up efforts to give practicing radiologists the tools to develop lung cancer screening programs at local institutions.”

**Emergency Radiology**
“Emergency radiology scientific sessions will highlight a continued focus on optimizing imaging for ER patients with a broad range of non-traumatic and traumatic presentations,” said Scientific Program Emergency Radiology Subcommittee chair Aaron D. Sodickson, M.D., Ph.D. “CT continues in the forefront, with particular attention given to protocol optimization and radiation dose awareness and a growing focus on dual energy applications in the ER setting. The expanding role of MR imaging in the ER is evident in the scientific content, along with thought-provoking submissions on imaging utilization and ER practice management,” Dr. Sodickson said.

Dr. Sodickson noted that emergency radiology series courses, combining refresher course content and scientific presentations, include an always popular trauma course, this year, “Contemporary and (Sometimes) Controversial Topics in Imaging of Trauma,” and a new session, “Evidence Based Imaging in Emergency Radiology: What is the Evidence?” “RSNA’s first oral scientific session dedicated to forensic radiology has been organized as an integrated science and practice session,” he added.

Education Exhibits Emergency Radiology Subcommittee chair Stephen F. Hatem, M.D., said overall submissions climbed more than 11 percent when compared to 2013, and nearly 50 percent from 2012. The largest bump came in head and neck/central nervous system, which increased four-fold. Other topics seeing considerable increases in abstract submissions included trauma, chest/cardiac, musculoskeletal and forensic imaging.

**Gastrointestinal Radiology**
Use of advanced imaging techniques—using features other than lesion size—to help predict or assess response to oncologic treatments for cancers including rectal, gastric, hepatic and pancreatic will be a hot topic this year, said Scientific Program Gastrointestinal Subcommittee chair David
Continued from previous page

H. Kim, M.D. “Attendees should pay special attention to some interesting imaging-based research concerning rectal cancer, the gastrointestinal applications of contrast-enhanced ultrasound in the abdomen and issues of lesion detection with CT dose reduction techniques in low-contrast situations,” Dr. Kim said.

“There were several noteworthy abstracts on the application of dual-energy CT and material-density imaging to improve diagnostic accuracy for common diseases of the abdomen,” said Lisa M. Ho, M.D., Education Exhibits Gastrointestinal Subcommittee chair. Reviewers were also enthusiastic about abstracts covering functional and quantitative imaging, such as MR diffusion and MR/CT perfusion.

**Genitourinary Radiology/ Uroradiology**

“Prostate imaging using multiparametric MR imaging continues to explode,” said Julia R. Fielding, M.D., Scientific Program Genitourinary Subcommittee chair. Developing MR imaging uses include replacing biopsy in cases when a patient chooses watchful waiting over more invasive therapies, and fusing MR imaging with ultrasound to target biopsy, Dr. Fielding said. New trends include testicular imaging, quantification of prostate imaging and perfusion imaging.

Trends in uroradiology education exhibits indicate continued interest in MR imaging of the prostate as it becomes more accepted by urologists for evaluation of patients suspected of harboring prostate cancer but with negative US-guided biopsies, as well as for active surveillance, said Education Exhibits Uroradiology Subcommittee chair Sheila Sheth, M.D.

**Health Services Policy and Research/Policy and Practice**

Cost, cost-restraint and value are the hot topics, said Paul Cronin, M.D., M.S., chair of the Scientific Program Health Service, Policy and Research Subcommittee. “Papers ranged from the variability and transparency of the cost of a diagnostic test in a certain geographic location to cost-effective analyses,” he said. “Abstracts discussed costs at local and national levels and also comparisons among health systems at a national level. Other abstracts assessed providing equivalent information, such as cancer staging, with fewer sequences, series or modalities.”

New topics included education simulation training and an increased emphasis on evidence synthesis to provide systematic reviews, meta-analyses, cost-effective analyses and decision rules. Abstracts indicated increased use of large databases, such as Surveillance, Epidemiology and End Results, to assess imaging on outcomes. Radiation dose, iodinated and gadolinium-based contrast agents are again popular issues, Dr. Cronin added.

Hot topics for education exhibits in this area include implications for radiologists with regard to the latest code updates from the International Statistical Classification of Diseases and Related Health Problems (ICD-10), said Dean K. Shibata, M.D., Education Exhibits Policy and Practice Subcommittee chair. “Excellent exhibit submissions, particularly in the education and quality improvement categories, should appeal to a wide range of interests,” Dr. Shibata added.

**Radiology Informatics**

Hot topics in informatics are value, analytics, mobility and quality image analysis, said Scientific Program Radiology Informatics Subcommittee chair Rasu Shrestha, M.D., M.B.A. “There has been much focus this year on image processing and analysis,” Dr. Shrestha said. “The quality of the submissions in this area shows that the industry is maturing to focus on image segmentation and algorithms that drive clinical decision making.”

Noteworthy topics in education exhibits include 3D printing and an exhibit on implementing a national RIS/PACS in Ireland, said Education Exhibits Radiology Informatics Subcommittee chair John Eng, M.D. “As in past years, some informatics education exhibits will be presented on individual standalone computer systems, allowing attendees a truly hands-on education experience and an opportunity to interact with project developers,” Dr. Eng added.

**Molecular Imaging**

New trends in molecular imaging include imaging of prostate cancer with PET tracers superior to choline, multimodality imaging (including PET/MR), and imaging inflammation, said Alexander Drzezga, M.D., Scientific Program Molecular Imaging Subcommittee chair. “A number of abstracts demonstrated potential consequences with regard to treatment selection/monitoring, including microtubular stabilization in neurodegeneration, staging in breast and prostate cancer using novel PET tracers, and increased drug delivery in pancreatic cancer,” he added.

“For education exhibits, many studies were submitted concerning imaging of prostate cancer and its metastases,” said Dr. Drzezga, who also serves as Education Exhibits Molecular Imaging Subcommittee chair. “Exciting novel tracers with high sensitivity for imaging of this common cancer have become available and are finding their way into clinics.

“In molecular imaging there is a clear trend towards translation of novel imaging approaches into clinical applications, which
represents an exciting development and opens the molecular imaging sessions to a broad audience,” Dr. Drzezga added.

**Musculoskeletal Radiology**

Trends in musculoskeletal radiology include soft tissue and bone tumor characterization with DWI and quantitative imaging, finite element analysis of bone and quantitative MR translating to clinical application, said Christine B. Chung, M.D., Scientific Program Musculoskeletal Radiology Subcommittee chair.

Ultrasound-guided procedures were a notable topic in abstracts submitted for education exhibits, which also included such new topics as high-volume stripping of tendons, according to Education Exhibits Musculoskeletal Radiology Subcommittee chair Kambiz Motamedi, M.D. “The tendon-related submission in particular was interesting because it is a new and exciting treatment to deal with chronic tendinosis, a disease entity that is difficult to deal with and is very stubborn to heal,” Dr. Motamedi said.

**Neuroradiology**

Evaluation of structural and functional brain connectivity for neuropsychiatric diseases is a hot topic in neuroradiology, said Pratik Mukherjee, M.D., Ph.D., Scientific Program Neuroradiology Subcommittee chair. Other topics include in vivo imaging of myelin using MR with ultra-short TE (UTE), whole-brain functional connectivity changes in multiple sclerosis and imaging in neuromyelitis optica. Other topics include head impacts and white matter changes in high school football players, functional connectivity of the default mode network in schizophrenia and arterial spin labeling perfusion for seizure foci in epilepsy.

**Nuclear Medicine**

“PET/MRI continues to be an active area of investigation that will be covered through a number of exciting presentations at this year’s RSNA meeting,” said Jonathan E. McConathy, M.D., Ph.D., Scientific Program Nuclear Medicine Subcommittee chair. “Topics include initial results with PET/MRI systems with time-of-flight capability, as well as evaluation of PET/MRI for specific oncologic imaging applications.”

Dr. McConathy also noted the two nuclear medicine series sessions, “Non-FDG PET Radiotracers in Oncology” and “Assessment of Cancer Treatment Responses: Updates,” will combine outstanding talks by invited speakers with presentations of clinical research studies that will provide an overview of the state-of-the-art in oncologic molecular imaging.

An increased focus on PET/MRI was also evident in abstracts submitted as education exhibits.

“PET/MRI scanning for clinical purposes at many centers around the world and also many abstracts integrating functional and structural imaging in their topics,” said Rathan M. Subramaniam, M.D., Ph.D., Education Exhibits Nuclear Medicine Subcommittee chair. “PET/MRI abstracts are a must see—as this is a major development in the field and will influence radiology as a whole,” he added.

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**Virtual Meeting**

Add the Virtual Meeting to Enhance Your RSNA 2014 Experience

Wondering how you’ll see everything there is to see at McCormick Place? This year’s Virtual Meeting offers 50 percent more content than last year and—new this year—provides the opportunity for radiologic technologists to obtain continuing education credit. With the Virtual Meeting you can tune in to a full slate of live and on-demand sessions during RSNA 2014 and on-demand sessions through December 19. The opportunity to earn CME or Category A+/A continuing education credits for radiologic technologist and radiologist assistants is available for live activities.

Visit RSNA.org/Virtual to add the Virtual Meeting to your registration. 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 past RSNA Virtual Meetings and explore the full gamut of offerings planned for RSNA 2014. Starting November 29, registered Virtual Meeting attendees can:

- Watch nearly 60 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—Participating in live courses can earn you CME credits from anywhere in the world.
- View digital education exhibits and digital scientific presentations.
- Shop cutting-edge products, services, equipment and software from RSNA 2014 exhibitors.
- See courses on demand through December 19. No CME credits are awarded for viewing on-demand sessions.

RSNA is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians. The RSNA designates this live activity for a maximum of 78.75 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 RSNA.org/Virtual. For more information, contact virtual@RSNA.org.
Pediatric Radiology
Hot topics to be featured at RSNA 2014 include the study of prenatal brain development using 3T imaging, according to Rajesh Krishnamurthy, M.D., the Scientific Program Pediatric Radiology Subcommittee chair. Postnatal imaging with non-rigid image registration and finite strain theory is another interesting development, Dr. Krishnamurthy added.

“This year’s topics in pediatric radiology education exhibits include cutting-edge applications in cardiac imaging and neuroradiology, as well as tutorials in basic concepts—there is something for everyone,” said Kate A. Feinstein, M.D., the Education Exhibits Pediatric Radiology Subcommittee chair.

Physics
This year, education exhibits in physics have expanded to include a third focus area: imaging science and interpretation. “The goal is to establish a stronger bridge between the more traditional, hard-core physical science aspects of radiology and those that depend on technology to produce images of the highest quality to optimize interpretation efficacy and efficiency,” said Elizabeth A. Krupinski, Ph.D., Education Exhibits Physics Subcommittee chair.

“This opens the door for more image quality submissions from researchers who struggled to find the best track for work that cuts across all modalities but doesn’t quite fit one in particular,” Dr. Krupinski added.

Among the 40 exhibits on the Physics track, dose will again be a highlight. The Imaging Science track covers a wide variety of topics that explore the multitude of ways the more basic sciences address day-to-day image presentation and interpretation. “Although all the papers are physics-based, they all focus on a distinct clinical problem and will be of interest to basic scientists, radiologists, residents and technologists in search of a better understanding of what makes a better image for interpretation while protecting patients and providing them with the safest and most effective imaging experience,” Dr. Krupinski said.

Radiation Oncology and Radiobiology
“Some of the most innovative abstracts in this area centered on exploration of biological mechanism of advanced radiation therapy, functional imaging during radiation therapy, refinement of advanced targeted image-guided radiation therapy delivery and radiation safety,” said Nina A. Mayr, M.D., Scientific Program Radiation Oncology/Radiobiology Subcommittee chair.

Education exhibits in radiation oncology and radiobiology continue to focus on the use of high-technology radiation therapy in the treatment of common malignancies, according to Education Exhibits Radiation Oncology Subcommittee chair Carl J. Rossi, Jr., M.D. He noted a particular focus this year on post-radiation imaging changes seen in normal tissue and how these findings can often be misinterpreted. “I would consider this to be a must see topic in our exhibits, as this is an issue that all radiation oncologists routinely face when reviewing post-treatment scans,” Dr. Rossi said.

Vascular/Interventional Radiology
“Dose reduction for both radiation and contrast use were again hot topics in CT and MR angiography,” said Charles T. Burke, M.D., Scientific Program Vascular and Interventional Subcommittee chair.

“Atherosclerotic imaging was also quite prominent, especially the use of metabolic imaging for better plaque characterization.” Other notable topics, Dr. Burke said, were 4D imaging, PET/MR for vascular imaging, using PET/MRI to not only provide anatomic information about vascular plaques but also metabolic information that can potentially be used for risk stratification, and percutaneous treatment of prostate cancer.
Plenary Lectures

RSNA 2014 will feature plenary session lectures on a spectrum of healthcare topics. All lectures will be presented in the Arie Crown Theater.

SPECIAL LECTURE
Sunday, November 30 • 8:30 a.m.

Exceptional Opportunities in Biomedical Research
In this Special Lecture, Francis Collins, M.D., Ph.D., the Director of the National Institutes of Health (NIH), will help celebrate the RSNA’s centennial meeting by examining the exceptional opportunities that scientific and technological breakthroughs offer for biomedical research. With particular focus on NIH-supported imaging research, the talk will examine recent advances in fundamental knowledge about biology—and highlight the ways in which that knowledge is serving to improve human health. Topics include the Brain Research through Advancing Innovative Neurotechnologies (BRAIN) Initiative; the Accelerating Medicines Partnership (AMP); and affordable technologies to extend imaging insights to low-resource settings. Dr. Collins will conclude with a discussion of future challenges, such as training the next generation of researchers, supporting the development of innovative research, programs, and partnerships; and encouraging broader appreciation and support for the biomedical research enterprise.

Before coming to the NIH, Dr. Collins was a Howard Hughes Medical Institute investigator at the University of Michigan. He is an elected member of the Institute of Medicine and the National Academy of Sciences, was awarded the Presidential Medal of Freedom in November 2007 and received the National Medal of Science in 2009.

NEW HORIZONS LECTURE
Monday, December 1 • 1:30 p.m.

Future of Ultrasound
Quantitative methods nearly unique to ultrasound are giving the modality a new life, says Jonathan M. Rubin, M.D., Ph.D. Dr. Rubin says rapidly expanding applications of elasticity imaging are poised to have a major impact—for example, shear wave speed imaging will likely replace liver biopsies for fibrosis/cirrhosis assessment. Volume flow estimation, meanwhile, has the potential to significantly affect transplant evaluations, fetal evaluation through umbilical cord blood flow measurements, carotid artery flow and cerebral perfusion. Finally, says Dr. Rubin, there are myriad new applications for contrast agents, using the bubbles that comprise the agents not only for contrast but also delivery.

In a research career spanning more than 30 years, Dr. Rubin has exploited the basic characteristics of ultrasound and other modalities to offer real-time imaging in neurosurgery, assess thrombus age in deep vein thrombosis, discriminate between edema and fibrosis in Crohn’s disease and improve gating methods for registering cardiac CT scans. In the area of blood flow detection and measurement, Dr. Rubin’s original paper on Power Doppler ultrasound has been referenced more than 800 times and he was among the first to describe volume flow.

Dr. Rubin serves as director of the Division of Ultrasound in the Department of Radiology at the University of Michigan Hospitals in Ann Arbor. He has served as principal investigator on more than 30 funded projects and holds 10 patents for ultrasound technology. Dr. Rubin has received the Joseph H. Holmes Clinical Pioneer Award of the American Institute of Ultrasound in Medicine and the Lawrence Mack Lifetime Achievement Award of the Society of Radiologists in Ultrasound.
ANNUAL ORATION IN DIAGNOSTIC RADIOLOGY

Transitioning From Volume-Based to Value-Based Practice: A Meaningful Goal For All Radiologists or a Meaningless Platitude?

Radiology faces many threats, ranging from commoditization, declining reimbursements, and termination of groups by hospitals to the perception that much imaging is unnecessary. Countering the threats, says David C. Levin, M.D., means moving from the current volume-based practice model to a value-oriented one. Dr. Levin calls on radiologists to become true consulting physicians who actively assess the appropriateness of imaging requests, more closely supervise performance of the studies and do better at communicating results to patients. Focusing more on quality is another way to provide value, he adds, as is developing closer ties to primary care physicians. With these changes, says Dr. Levin, within five years radiology could be considered a high-value specialty more helpful to patients and referring physicians than at present.

Dr. Levin is professor and chairman emeritus of the Department of Radiology at Jefferson Medical College and Thomas Jefferson University Hospital in Philadelphia. He is regarded as an expert in health policy and practice, with recent research focusing on the utilization and costs of imaging procedures, the effects of self-referral and practice patterns in imaging. Dr. Levin established the Jefferson Center for Research on Utilization of Imaging Services.

A prolific author, researcher and lecturer, Dr. Levin was awarded the RSNA Gold Medal in 2009 and also has received the gold medals of the American Roentgen Ray Society, American College of Radiology, Association of University Radiologists and Society of Interventional Radiology. In 2008, an endowed chair was established in his honor at Thomas Jefferson University, renaming the chair of the Department of Radiology as The David C. Levin Professor and Chair of Radiology.

ANNUAL ORATION IN RADIATION ONCOLOGY

"Error Bars" in Medical Imaging: Stealth and Treacherous

While medical imaging has markedly improved radiation therapy, limitations remain and excessive over-reliance on imaging can be detrimental, according to Lawrence B. Marks, M.D. For example, clinicians must understand the likely patterns of cancer spread, beyond the radiologically defined lesion, when defining targets for radiation therapy. Differences in the physiologic state during diagnostic imaging, versus treatment, can influence the validity of medical images for radiation planning; for example, "good" diagnostic images may require breath hold, while therapy is usually not delivered in this state. Dose volume histograms, a cornerstone of modern radiation oncology, typically ignore inter- and intrafraction motion and discard all spatial information. Meanwhile, oncologist-radiologist communication is often ambiguous, potentially increasing risks for misinterpretation and errors—EHR-based standardization of our communication should be embraced. Dr. Marks urges all to acknowledge and minimize the error bars associated with the application of medical images to RT.

Dr. Marks is the Dr. Sidney K. Simon Distinguished Professor of Oncology Research in the Department of Radiation Oncology at the University of North Carolina at Chapel Hill School of Medicine. He is a recognized expert in radiation therapy-in-
duced normal tissue injury, has conducted several imaging-based prospective clinical trials to better understand radiation-induced lung and heart injury, and was the lead physician for the recent Quantitative Analyses of Normal Tissue Effects in the Clinic (QUANTEC) initiative sponsored by the American Society for Radiation Oncology and the American Association of Physicists in Medicine.

Dr. Marks is also interested in human-factors engineering and has studied the frequency and causes of human errors in the radiation oncology clinic. This work has led to the implementation of systems aimed to reduce errors and enhance patient safety. He has published and lectured about this sensitive issue and serves on several national committees aimed to improve patient safety.

RSNA/AAPM SYMPOSIUM

Thursday, December 4 • 1:30 p.m.

Radiomics: From Clinical Images to Omics

In this symposium presented in conjunction with the American Association of Physicists in Medicine, Robert J. Gillies, Ph.D., and Hedvig Hricak, M.D., Ph.D., Dr. h.c., will describe the motivation underlying medical imaging analyses of tumor heterogeneity and response to therapy, and the role of medical imaging omics in oncology as a biomarker and the potential benefits leading to improved outcomes. They will also address the benefits and challenges of advanced and high-throughput image analysis from large databases at multiple centers.

Dr. Gillies is chair of the Department of Cancer Imaging and Metabolism, director of the Center of Excellence in Cancer Imaging and Technology, vice-chair for research in the Department of Radiology and scientific director of the Small Animal Imaging Lab (SAIL) and Image Response Assessment Team (IRAT) shared services at the Moffitt Cancer Center in Tampa, Fla. Dr. Gillies’ research emphasizes the use of imaging to inform evolutionary models of carcinogenesis and response to therapy. He currently serves the National Cancer Institute as a member of the Experimental Therapeutics (NExT) special emphasis review panel and the Network Consulting Team for the Early Detection Research Network (EDRN). Dr. Gillies also serves the U.S. Department of Defense as a member of the integration panel for the Prostate Cancer Research Program.

Dr. Hricak is chair of the Department of Radiology at Memorial Sloan-Kettering Cancer Center, a professor of radiology at Cornell University Medical College and an attending radiologist at Memorial Hospital, all in New York. She is a genitourinary imaging authority who helped develop the use of MR imaging and CT for gynecological cancers. Dr. Hricak has served as the principal investigator of a National Institutes of Health (NIH)-funded study on the use of MR imaging and MR spectroscopy for risk assessment in prostate cancer patients. She also has co-directed an NIH-funded program that trains young scientists and physicians in oncologic molecular imaging. Dr. Hricak served as RSNA president in 2010.

SATURDAY COURSES

Nuevos Horizontes en Diagnostico por Imagen Desde el CIR: Sesion del Colegio Interamericano de Radiología (CIR) en Español/New Horizons in Diagnostic Imaging from CIR: Session of the Interamerican College of Radiology (CIR)

This session is presented in Spanish with simultaneous English translation.

AAPM/RSNA Tutorials: Multi-spectral and Volumetric Imaging

The Physics Tutorial for Residents looks at the underlying physics of multi-spectral volumetric imaging and the advanced applications that can increase its effectiveness. Imaging artifacts resulting from hybrid imaging techniques and the limitations of the technology will be discussed.

Immediately following is the Tutorial on Equipment Selection, which details the advanced capabilities of multi-spectral volumetric imaging in the major modalities of ultrasound, MR, CT and nuclear 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.

Claim Credit Electronically with Credit Eval

Evaluate RSNA 2014 courses and sessions and claim credits online, via your own laptop or mobile device, or at any of the Internet Kiosks within McCormick Place. The Credit Eval Center allows you to begin your evaluations as early as 10 minutes after courses begin, claim your credits onsite, and walk away with printed certificates in hand. You will also receive links via e-mail that allow you to print certificates at home. 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. Assistance will be available in the Mobile Connect booth in the RSNA Services area. Before the meeting, visit Credit Eval to build your agenda—RSNA.org/AnnualMeeting.
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 from 4:30-6:00 p.m. will feature chest, abdomen and neuroradiology cases; Tuesday’s and Wednesday’s sessions from 7:15-8:15 a.m. will feature a potpourri of body, cardiac, musculoskeletal, neuroradiology, and ear/nose/throat cases; and Thursday’s session from 3:00-4:00 p.m. will feature musculoskeletal, pediatric, and interventional radiology cases. All sessions will be held in Room E451B.

Estate Planning Focus of Monday Session

Understanding the fundamentals of estate planning, planning for retirement and strategies for leveraging taxable gifts are among the topics to be covered at the Monday session, “Estate Planning for a Better Tomorrow.”

Alicia K. Waltenberger, Esq., Director, Wealth Planning Strategies, TIAA-CREF Financial Services, will discuss retirement needs analysis, Roth conversions, estate planning basics, leveraging taxable gifts, non-tax-related planning and charitable planning. A question/answer period will follow the session.

“Estate Planning Today for a Better Tomorrow” will be held from 3:00–5:30 p.m., Monday, Dec. 1, in Room E253AB.

“Presents” Sessions Spotlight Canada, Korea

For its 100th anniversary, RSNA has partnered with the Canadian Association of Radiologists (CAR) and the Korean Society of Radiology (KSR) to bring the best research and education from Canada and Korea to share with RSNA. Read more on Pages 5-6.

Canada Presents

“Beyond Diagnosis: How Cardiovascular Imaging Research in Canada is Improving Clinical Outcomes,” is scheduled for Tuesday, 10:30 a.m.–12:00 p.m. The session will include presentations in multiple modalities, case studies and a panel discussion by Canadian experts in cardiovascular radiology. The course will include six 10-minute presentations, followed by a 30-minute panel discussion with the audience.

The session will be moderated by Bruce B. Forster, M.D., and Jonathon A. Leipsic, M.D. Presenters are Dr. Leipsic, Vancouver, Mayank Goyal, M.D., FRCPC, Calgary, Gilles P. Soulez, M.D., Montreal, Darren Klass, M.D., Ph.D., Vancouver, Andrew M. Crean, M.D., Toronto, and Ting-Yim Lee, MSc., Ph.D., London.

For more information on Canada Presents, visit RSNA’s dedicated website at RSNA.org/CanadaPresents.

Korea Presents

“Exploring Evidence in Cardiovascular Imaging,” is scheduled for Monday, 10:30 a.m.–12:00 p.m. The session, including 20-minute lectures by top Korean radiologists—each followed by a 5-minute discussion—will be moderated by Tae-Hwan Lim, M.D., and Arthur Stillman, M.D. Presenters are Jin Hur, M.D., Sang II Choi, M.D., and Byoung Wook Choi, M.D., Ph.D.

For more information on Korea Presents, visit RSNA’s dedicated website at RSNA.org/KoreaPresents.

Earn SAM, CME credits.

Forty-one in-person self-assessment module (SAM) courses will be offered at RSNA 2014, 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 (MOC) process. Participants can earn up to 150 SAM Credit and 150 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 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.

Six weeks after SAM participation at the RSNA Annual Meeting, attendees will receive an e-mail directing them how to retrieve test remediation, additional references and their earned SAM certificate. Attendees receive anonymous peer data comparison, including submitted answers and the peer performance for each question answered. References are also provided for each SAM question to encourage and facilitate further independent study.

Pre-registration is required for SAM courses. Go to RSNA.org/Register. Members attend RSNA 2014 for $50. Non-members pay $175.
REFRESHER AND MULTISSESSION COURSES

RSNA 2014 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 Certificate Sessions at RSNA 2014

Attendees of the Quality Multi-Session Symposium on Tuesday, Dec. 2, will have a chance to earn up to three Quality Essentials Certificates (QEC) designed to recognize those who demonstrate a threshold level of knowledge in four quality improvement domains. QECs will be available in the following sessions:

TUESDAY
8:30-10:00 a.m. (MSQI31)  • Fundamentals of Lean: What, How and Why Now? (Satisfies domain: Quality Improvement in Your Practice)
10:30 a.m.-12:00 p.m. (MSQI32)  • Implementing Lean in Your Practice (Satisfies domain: Radiologist Performance Improvement)
1:30-3:00 p.m. (MSQI33)  • The Lean Toolbox in Practice (Satisfies domain: Staff and Patient Safety)

A Quality Essentials Certificate is awarded to participants who earn 80 percent or higher on the related SAM test. Last year’s online QEC courses are available at RSNA.org/Quality.

Advanced Level Quality Certificate

To be eligible to receive an Advanced Level Quality Certificate, candidates must attain a QEC in each of these categories: Quality Improvement in Your Practice, Staff and Patient Safety, Customer Satisfaction and Radiologist Performance Improvement. Candidates must also have exhibited a Quality Storyboard poster at an RSNA Annual Meeting. For more information, visit RSNA.org/Quality.

RSNA 2014 Professionalism Course Reviews Future Impact of Past Century of Technology

As the RSNA enters its second century, and into an age of molecular and genomic imaging, reviewing the ethical implications of radiological technologies developed in the past century may offer insights into ethical dilemmas that new imaging technologies may create in the future. An RSNA 2014 RSNA Professionalism Committee refresher course, “The Ethical Power of Radiologic Technology: Reviewing the Past to Prepare for the Future,” will examine the interface of ethics and radiological technology. Professionalism Committee Chair Stephen D. Brown, M.D., will lead the interactive sessions. Registration for all RSNA 2014 courses is underway at RSNA.org/Registration.

LEARNING CENTER

The Learning Center, located in Hall D, Level 3, is home to education exhibits, Quality Story Boards and scientific poster 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. Digital scientific posters and education exhibits are available to meeting attendees via the Virtual Meeting 24 hours a day throughout the meeting week.

Quantitative Imaging

Located in the 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 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.

Pediatric and Nuclear Medicine/Molecular Imaging Campuses

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 S101B and S102AB of McCormick Place. The Nuclear Medicine/Molecular Imaging Campus is located in S503AB, S504CD and S505AB. Lunch hour CME sessions featuring discussions of scientific posters and education exhibits in the pediatric and nuclear medicine/molecular imaging subspecialties will take place in the campuses.

RADIOLOGY INFORMATICS

IHE/RSNA Image Sharing Demonstration

The Integrating the Healthcare Enterprise (IHE®) Image Sharing Demonstration in Booth 1336 in South Building, Hall A, showcases state-of-the-art methods being deployed today to make medical images and related data available securely and conveniently. Learn how radiologic care centers can share images and reports with patients and healthcare providers through image-enabled personal health record

Continued on next page
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accounts, how dose reports can be used to
monitor patient radiation exposure, and how
clinical image data can be processed and
shared for use in clinical trials and teaching
files. Demonstrations, taking place regularly
during exhibit hours, will feature systems
developed for the RSNA Image Share
network, vendors and research organiza-
tions.

In addition, the refresher course “The RSNA
Image Share Network—How It Operates
and How to Put It into Your Office,” on
Wednesday from 12:30 to 2:00 p.m. in
Room S501ABC, will detail the goals and
technical architecture of the RSNA Image
Share project. Attendees interested in
implementing Image Share at their sites are
invited to attend a town hall meeting
following the refresher course.

Informatics Courses
More than 70 refresher courses, many of
them hands-on, will be offered on
informatics topics including advanced
imaging tools, monitoring radiation
exposure, computer-aided diagnosis and 3D
printing. Courses are also available on
RSNA Informatics projects such as Clinical
Trial Processing software, MIRC® Teaching
File software, RadLex® and Reporting.

Informatics Area—Learning
Center
Visit the Informatics area in the Learning
Center to take guided tours of IHE, MIRC,
RadLex and Reporting. For more informa-
tion, go to RSNA.org/informatics.

RSNA EDUCATION

RSNA Store Features Refresher
Courses Available for Purchase
on USB
Visit the RSNA Store in the Lakeside Center
for a demonstration of the new refresher
courses on USB. With over 60 individual
refresher courses and multiple topical
collections available for purchase on USB,
the RSNA Store has a wealth of learning
opportunities spanning all subspecialty
areas.

Each USB is compatible on both Mac and
Windows operating systems, and no
internet connection is required. Each USB
includes up to 3GB of additional storage for
personal use.

RSNA staff will also be available in the store
to give demonstrations of the integrated
features on each refresher course,
including the built-in transcript feature,
automatic bookmarking feature, and
included CME test. Individual courses cost
$55 for members and $80 for
non-members. Refresher course collections
on USB are reduced 25 percent from
individual USB pricing. Collections offer two
or three refresher courses packaged on one
convenient device.

If you are not attending the annual meeting
you can still purchase the USBs by visiting
rsna.org/purchase. Contact the Education
Center at ed-ctr@rsna.org for more
information on all of our education
offerings.

Academy of Radiology
Leadership and Management
More than 30 courses at RSNA 2014 count
toward the Certificate of Achievement
offered by the Academy of Radiology
Leadership and Management (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, profes-
sionalism, legal/contracting and academic
mission.

In addition, ARLM-eligible courses now also
count toward the Radiology Leadership
Institute of the American College of
Radiology.

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

Continued from previous page

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McCormick Place and Chicago

Getting around McCormick Place and the RSNA annual meeting is easy thanks to helpful digital and printed resources. Diverse technical exhibits and a broad spectrum of RSNA services and dining and entertainment options help you get the most out of your trip to the Windy City.

TECHNOLOGY

Take advantage of digital resources to learn more about specific sessions, get general information and find your way around RSNA 2014 and McCormick Place.

Meeting Central

Bookmark RSNA.org/AnnualMeeting as your go-to source for the very latest, up-to-date information:

- **RSNA Meeting Program**
  The online RSNA Meeting Program offers easy-to-search, detailed information about each of the hundreds of presentations happening at RSNA 2014. In addition to searching for courses by keyword, title and name of presenter, users can search the online program by day, type and subspecialty.

- **Frequently Asked Questions**
  Whether you’re wondering where to pick up your badge, how to make travel arrangements, how to access the Meeting Program, or what the weather is like in Chicago, Meeting Central has the answers to your RSNA 2014-related questions. This section covers a broad range of topics including travel, housing and exploring Chicago.

- **Credit Eval Center**
  Credit Eval makes claiming credit easy.
  Read more on Page 30.

Meeting App

Download the RSNA 2014 app for Apple and Android smartphones and tablets and access the Meeting Program even when you’re offline. The app also offers maps for navigating McCormick Place, online help during the annual meeting, a QR code scanner, an agenda planner and exhibitor list access, and a notification center with important meeting alerts. Available via the App Store and Google Play. The RSNA 2014 app is sponsored by Siemens.

Mobile Connect Booth—RSNA Services

Get the most out of your personal digital devices, including the on-the-go flexibility offered by RSNA’s mobile apps. Tech experts will be on hand in this casual, open environment in RSNA Services to help attendees get familiar with the functions of their mobile devices and introduce them to RSNA apps, the Meeting Program, and Credit Eval. Stop by anytime during RSNA Services hours for personalized, hands-on help from RSNA experts.

Internet Kiosks

Computers will be available at Internet Kiosks throughout McCormick Place for use in accessing Meeting Central and the Credit Eval Center (see Page 30).

WiFi

Wireless connectivity is available throughout McCormick Place. Note: These wireless networks are not secure and should not be used for sending sensitive information.

Charging Stations

Charge your laptop, cellular phone or other device at one of the Charging Stations located throughout McCormick Place.

TECHNICAL EXHIBITS

Technical Exhibits at RSNA 2014 will feature nearly 700 exhibitors in two halls: Hall A in the South Building and Hall B in the North Building. A balanced mix of companies will be located in both halls.

Featured in the Technical Exhibits:

- **Country Pavilions:** Exhibitors from Canada (Ontario), China, France, Germany, Japan and Korea will showcase their products and services in their country booths.

- **Publishers Row:**
  Browse educational titles in all areas of medical imaging in South Building, Hall A.

- **Vendor Workshops:**
  Get hands-on tutorials of vendor software systems.

- **Associated Sciences:** Organizations for allied professionals are located together in South Building, Hall A.

- **Bistro RSNA:** Enjoy a great lunch without leaving the exhibit halls.

Continued on next page
Detailed maps of exhibit halls are available on the annual meeting website (RSNA.org/AnnualMeeting). Browse a comprehensive, up-to-the-minute list of the exhibitors and their products and services to map out your visits to the exhibit floors.

The RSNA 2014 meeting app is available for download to help you plan your visit to the RSNA Technical Exhibits. This app lists complete exhibitor information including floor plans.

**Technical Exhibits Guide**
Available at McCormick Place, the Technical Exhibits Guide includes floor plans, exhibitor list, food service and other exhibit floor activities. Distributed in bins adjacent to the Daily Bulletin and at exhibit hall entrances, the Technical Exhibits Guide is an essential navigational tool for RSNA attendees.

**Technical Exhibits Hours**
Hall A (South Building) and Hall B (North Building)

**Sunday**
11:00 a.m. – 5:00 p.m.

**Monday-Wednesday**
10:00 a.m. – 5:00 p.m.

**Thursday**
10:00 a.m. – 2:00 p.m.

**Centennial Showcase**
Adjacent to RSNA Services in Hall D is the Centennial Showcase. Turn to Page 9 to read about this one-of-a-kind celebration of radiologic advancement.

**RSNA SERVICES**
RSNA staff will demonstrate resources, provide information and answer questions about RSNA’s full array of products and services. Anchored by the RSNA Plaza, RSNA Services on Level 3 of the Lakeside Center offers:

**RSNA Global Connection:**
Unique networking opportunities to connect radiology professionals from around the world.

**Career Connect:**
The place to go if you’re looking for a job or advertising to fill one.

**Journals, News & RadiologyInfo.org:**
Check out RSNA’s print, online and mobile publications and the RSNA-American College of Radiology public information website.

**Membership:**
Get answers to questions about membership, journal subscriptions, dues payments and making the most of your benefits.

**Radiology Cares**: The Art of Patient-centered Practice:
RSNA’s campaign to optimize the patient experience in radiology.

**RSNA Store:**
Education products including refresher course USBs and Radiology Select. Explore RSNA mobile CME products and find RSNA-branded merchandise and apparel, with special items this year to mark the RSNA Centennial.

**Research & Education (R&E) Foundation:**
Learn more about R&E activities, including current grant and award recipients as well as individual, private practice and corporate donors.

**The R&E Donor Lounge:**
Offers computers, a coat room and comfortable furniture for relaxation and refreshments for those who have received a donor ribbon as well as those who have contributed at least $300 onsite.

**Headshot area:**
Have a professional headshot taken for free to use for CVs, passports and social media profiles.

**Virtual Meeting:**
Learn more about and register for the Virtual Meeting.

**Help Center**
Look for the icon throughout McCormick Place to find help. Visit one of the RSNA Help Centers located in the Grand Concourse, Level 3, or Lakeside Learning Center Ballroom, Level 3, where RSNA staff can assist with general information or any of the following:
• Badge replacement/correction
• Chicago tourism information
• Hotel information
• Interpretation services
• Lanyard pickup
• Replacement course tickets
Also in the Grand Concourse, visit the RSNA Concierge Services Desk, where staff will assist with the following services:
• RSNA Tours & Events
• Chicago restaurant reservations
• Bistro RSNA Tickets

**Ribbon Pick-Up**
This year, RSNA will award approximately 13,000 special recognition ribbons recognizing long-term members, RSNA committee members and refresher course faculty. Ribbons can be picked up in the Grand Concourse, Level 3, at the Ribbon Desk.
**Registration & Housing**

**Final Discounted Advance Registration**

Register by Nov. 7 to receive the discounted registration fee and full conference materials mailed to you in advance. (International visitors must register by Oct. 24 to receive these materials in advance.) Registrations received after Nov. 7 will be processed at the increased fee and conference materials must be obtained at McCormick Place. No hotel reservations will be accepted via the RSNA housing system after Nov. 7.

**RSNA 2014 Registration**

<table>
<thead>
<tr>
<th>Internet (fastest way)</th>
<th>Telephone (Mon-Fri. 8:00 a.m. – 5:00 p.m. CT)</th>
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<tbody>
<tr>
<td>Go to RSNA.org/Register</td>
<td>1-800-650-7018 • 1-847-996-5862</td>
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</tbody>
</table>

**Registration Fees**

<table>
<thead>
<tr>
<th>By Nov. 7</th>
<th>After Nov. 7</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>$0</td>
<td>$100</td>
<td>RSNA/AAPM Member</td>
</tr>
<tr>
<td>$0</td>
<td>$0</td>
<td>RSNA/AAPM Member Presenter</td>
</tr>
<tr>
<td>$0</td>
<td>$0</td>
<td>RSNA Member-in-Training, RSNA Student Member and Non-Member Student</td>
</tr>
<tr>
<td>$0</td>
<td>$0</td>
<td>Non-Member Presenter</td>
</tr>
<tr>
<td>$180</td>
<td>$280</td>
<td>Non-Member Resident/Trainee</td>
</tr>
<tr>
<td>$180</td>
<td>$280</td>
<td>Radiology Support Personnel</td>
</tr>
<tr>
<td>$825</td>
<td>$925</td>
<td>Non-Member Radiologist, Physicist or Physician</td>
</tr>
<tr>
<td>$825</td>
<td>$925</td>
<td>Hospital or Facility Executive, Commercial Research and Development Personnel, Healthcare Consultant and Industry Personnel</td>
</tr>
<tr>
<td>$325</td>
<td>$325</td>
<td>One-day registration to view only the Technical Exhibits</td>
</tr>
</tbody>
</table>

**Virtual Meeting Registration Fees**

<table>
<thead>
<tr>
<th>Fee</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>$0</td>
<td>RSNA Member-in-Training, RSNA Medical Student Member and Retired RSNA Member</td>
</tr>
<tr>
<td>$100</td>
<td>RSNA/AAPM Member</td>
</tr>
<tr>
<td>$300</td>
<td>Non-Member</td>
</tr>
</tbody>
</table>

**Onsite Registration**

Those who register after the deadline or do not receive their badges in advance should proceed to Professional Registration, Already Registered line, located in the Lakeside Center, Level 3, Hall D. Those who did not register in advance and wish to obtain a badge should proceed to Professional Registration, New Registration line located in the Lakeside Center, Level 3, Hall D. RSNA encourages attendees to do this on Saturday, November 29, to avoid long lines later in the week.

**Hours of Operation:**

- **Saturday, November 29**
  - 12:00 p.m. – 6:00 p.m.
- **Sunday, November 30—Thursday, December 4**
  - 7:30 a.m. – 5:00 p.m.
- **Friday, December 5**
  - 7:30 a.m. – 12:00 p.m

**RSNA News**

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**Reserve Your Room Now**

Discounted hotel room rates are available for RSNA attendees. To see the hotel list and room rates go to RSNA.org/Register. Don’t delay and miss your chance to save. The deadline for housing reservations and changes through RSNA is Nov. 7. A deposit equal to one night stay including tax is required to confirm your hotel reservation. Reservations may be secured with a major credit card at the time of booking. The credit card must be valid through December 2014 and will be charged by the hotel approximately two weeks before the annual meeting. Registrants can also send a check, money order or wire transfer (payable to RSNA) for the hotel deposit. (Attendees are responsible for all wire transfer fees.)

**Exclusive Air Discounts**

**American Airlines**

American offers a 5 percent discount off lowest applicable fares. Applicable restrictions may apply. Book online at AA.com/group with promotional code 99N4BI or call American at 800-433-1790 and provide the promotional code. Service fees may apply for phone reservations.

**United**

United offers discounts from 2 percent to 10 percent off applicable fares. Discounts apply on United Airlines and flights operated by United or other airlines branded United Express. International discounts are allowed on flights operated and/or marketed on the following carriers provided such flights are booked by a travel agency or United Reservations:

- **Flights via the Atlantic:** Air Canada, Austrian Airlines, Tyrolean Airways, Brussels Airlines, Lufthansa Airlines, Swiss International Airlines
- **Flights via the Pacific:** United codeshare flights operated by All Nippon Airways

Applicable terms and restrictions apply. Book online at United.com with offer code ZR28820672 or call United at 800-426-1122 and provide the offer code. Service fees apply for phone reservations.

**Delta Air Lines**

Delta offers special discounts off most fares. Applicable restrictions may apply. Discounts applicable to U.S./Canada originating passengers. Book online at Delta.com and enter Meeting Event Code NMHP6.
TRANSPORTATION
RSNA offers complimentary shuttle bus service to and from McCormick Place. A dedicated bus lane makes the trip quick and easy, even during rush hours. Check signage in the hotel lobby and at McCormick Place Convention Center for exact pick-up and drop off locations.

Ride the Metra Electric Train for free using the Metra ticket located in your registration envelope. Trains run from downtown Chicago stations to the McCormick Place Convention Center Station in just seven minutes. Stations are located within walking distance to many hotels. The ticket must be shown to the conductor when requested. For more information about shuttle bus service and Metra, including the arrival and departure schedules, go to RSNA.org/AnnualMeeting and click PlanYourTrip.

FINDING YOUR WAY
RSNA 2014 publications, procedures and features help attendees make the most out of the annual meeting.

Name Badge
A name badge is required to attend RSNA courses or events or to enter the exhibit halls. RSNA encodes a simple QR code on name badges with the registrant’s name, institution, address, e-mail address, phone/fax numbers and radiologic specialty as provided at the point of registration. This QR Code can be scanned by a technical exhibitor when an attendee requests information or follow-up. If you prefer that exhibitors contact you at a different address than is shown, provide alternate information directly to the exhibitor at the point of contact or at the RSNA Help Centers.
RSNA uses radiofrequency identification (RFID) badge scanning technology within the Technical Exhibit Halls. No personal information is stored in the RFID badge, only an ID number. Should you wish to “opt out” of this program, please visit either Help Center onsite located on Level 3 of the Grand Concourse and Lakeside Center.

SERVICES FOR INTERNATIONAL ATTENDEES
• Certificate of Attendance—Use the computers in the Internet Kiosks to print a personalized certificate of attendance.
• Interpretation Services – International attendees will be assisted at the Help Centers and at Professional Registration with their conference questions in the following languages: Chinese, Dutch, French, German, Italian, Japanese and Spanish.
• Travel Services - ESA Voyages, the official international travel provider at RSNA 2014, will be available at the Help Center (Grand Concourse, Level 3) and at Professional Registration (Lakeside Center, Level 3, Hall D) to assist with questions.
• Currency Exchange services are no longer offered at McCormick Place, but various locations can be found in Chicago and within both Chicago airports.

Pocket Guide
The RSNA 2014 Pocket Guide is an important, easy-to-use reference guide to items such as:
• Complete A-Z listing of everything available to attendees
• Event information
• Floor plans of each building and each floor of McCormick Place
• Shuttle bus schedules, routes and boarding locations
• Taxi fees and loading and unloading areas
• Airport transportation service with times, costs and boarding information
• Complete Metra Electric Line Train System schedule outlining station locations, times and drop-off destinations
• Parking lot locations, hours and fees

RSNA Program in Brief, Official Meeting Bag and Lanyard
One complimentary copy of the printed RSNA 2014 Program in Brief, official meeting bag and lanyard are available at the new self-serve distribution areas located in the Lakeside Center, Level 3, Hall D (across from Registration) or in the Grand Concourse, Level 3. Additional copies of the Program in Brief will be available for purchase at the RSNA Store.

In addition to the printed RSNA 2014 Program in Brief, RSNA offers an online program with a user-friendly search engine to find presentations to fit your schedule. (See more information on Page 34.)
**Daily Bulletin**

The *Daily Bulletin* is the official newspaper of the RSNA annual meeting. Featuring overnight news from the meeting, the newspaper can be found in bins throughout McCormick Place. Each day’s issue will also be available via the RSNA 2014 Mobile App and online at RSNA.org/Bulletin. The *Daily Bulletin* also includes a Technical Exhibits Focus section offered Sunday-Wednesday to alert attendees to new radiologic technology and services demonstrated by technical exhibitors at the meeting.

**Press Conferences**

While the *Daily Bulletin* is your direct source for RSNA 2014 news, more than 150 members of the news media typically attend the annual meeting, to capture the breaking news coming out of the event. Print, broadcast and online media throughout the world carried more than 18,000 stories about RSNA 2013. Press conferences will again be held onsite at the 2014 meeting to highlight some of the newsworthy research being presented. This year’s press conferences will feature a lineup of current topics of great interest to the general public and will showcase radiology’s contributions to disease and injury detection, diagnosis and treatment.

**Residents and Fellows**

RSNA 2014 offers a full roster of Resident and Fellow-focused programming along with unparalleled networking opportunities and perks for trainees. RSNA annual meeting registration is free for RSNA members-in-training. Go to RSNA.org/Register.

**Residents/Fellows Programming**

Tailored specifically for radiology residents and fellows, the program features a Wednesday symposium offering a wide range of sessions including, “Career 101: What Type of Job is Best for Me?” “Practice Experts Answer Your Questions,” “What You Should Know About the Job Market,” “Interviewing to Win: Secrets from the Business World,” and “Money Talk: The Veil is Lifted,” along with a session featuring “Recent Hires Answers to the Job Questions You Need to Know.” Residents and fellows may also be interested in the Tuesday program, “Strategies for ABR Core Exam and ACGME Program Requirements,” featuring sessions including, “The ABR Core Exam: An Update on Strategies That Work.”

**Residents Lounge**

Located in the Learning Center, the lounge offers RSNA members-in-training and nonmember residents a place to relax and network while enjoying complimentary refreshments. The lounge is open Sunday – Thursday, 8:00 a.m. – 6:00 p.m.

**Residents Reception**

Offered in conjunction with the American College of Radiology, the reception gives residents a chance to eat, mix and mingle with their peers and network with longtime RSNA members and leaders. The reception is held Monday, 4:00–5:00 p.m., in the Hyatt Regency McCormick Place hotel.

**RSNA Research & Education Foundation**

Visit the R&E Foundation area in RSNA Services to explore grants available to residents and fellows. Learn about the work of past grant recipients and the application process.

**Resident/Fellow Brochure**

Residents and fellows attending the meeting will want to pick up the “Resident/Fellow” brochure listing other courses and sessions with content of interest to members in training.

**Tours and Events**

RSNA has teamed up with Hosts Chicago and Bloomingdale’s to offer you exclusive ways to experience Chicago during your stay for RSNA 2014. This year’s lineup offers multiple city tours, shopping excursions, culinary experiences, museum exhibits, and theater performances. Six days of action-packed tours are offered. The RSNA Tours & Events brochure is available at RSNA.org/Register.

**5k Fun Run**

**Tuesday, December 2, 6:30 a.m.**

**Arvey Field, South Grant Park, Chicago**

Enjoy a 5k event with your colleagues along Chicago’s beautiful Lake Michigan shore and help fuel critical research to keep our specialty at the forefront of healthcare. During online registration or onsite at McCormick Place, you can sign up as a runner or walker for the 5k Fun Run. The signup donation is $40, will benefit the RSNA R&E Foundation, and is fully tax deductible. You’ll also receive a commemorative T-shirt.
2014 Dining Guide

Whether you prefer to eat your meals at McCormick Place or catch a cab to a trendy downtown Chicago eatery, we’ve got a full menu of dining options for RSNA 2014. Visit the Help Desk near the Grand Concourse for restaurant recommendations, reservations and concierge services.

Bistro RSNA—The Best Place to Eat, Meet & Network

With an extensive gourmet menu and ample seating, Bistro RSNA is an excellent option to sit down to a comfortable lunch and network with colleagues. Each exhibit hall houses a Bistro RSNA. One low price of $20 gets you an all-inclusive meal, including tax, beverages and dessert, as well as express entry and a reserved seat. The menu changes daily. Purchase tickets online before Nov. 26 and save another $1.00 off the onsite price, at RSNA.org/BistroRSNA.aspx

Chicago Offers World-Class Dining Options

No matter the palate or the wallet, Chicago provides visitors with an exciting selection of cuisines and settings at mealtime. Round out your RSNA 2014 experience by taking an excursion to one of Chicago’s eclectic roster of restaurants.

NEW—Indicates a restaurant appearing on the RSNA list for the first time.

AMERICAN

Acadia
1639 S. Wabash Ave.; 1-312-360-9500
The minimalist chic of the room helps temper the complexity of the menu. Famous for the Yukon Gold potato and green apple risotto, this high-end, contemporary American restaurant has something for everyone, including a burger. Very Expensive

Ada Street
1664 N. Ada St.; 1-773-697-7069
Chicago restaurant greats Michael Kornick and David Morton teamed up again on Ada Street, a tavern featuring tasty, hearty, small plates. Take time to visit the restaurant’s vinyl library to select a record for the staff to play. Inexpensive

NEW Barn & Company
950 W. Wrightwood Ave.; 1-773-832-4000
Not only does Pitmaster Gary Wiviott serve up some mean smoked brisket and baby back ribs, but this BBQ joint also has a Barn Dance the first Friday of each month with country music, bales of hay and a mechanical bull. Moderate

The Bedford
1612 W. Division St.; 1-773-235-8800
Dinner and cocktails are served in the vault of a former bank. The German-influenced menu changes frequently to accommodate the availability of locally grown foods. Locals are streaming in to enjoy the bar scene and specialty drinks. Moderate

Blackbird
619 W. Randolph St.; 1-312-715-0708
This trendy hot spot serves contemporary American cuisine with seasonal emphasis. Expensive

The Boarding House
720 N. Wells St.; 1-312-280-0720
A two-level dining room, a chandelier made of over 9,000 wine glasses, and a 500-bottle wine list set the atmosphere for this River North eatery opened by Alpana Singh. Expensive

Brunch
644 N. Orleans St.; 1-312-265-1411
The perfect stop for guests at River North hotels, Brunch offers several choices including a breakfast bar, table service and carryout from one of the few breakfast options in the area. Inexpensive

Carriage House
1700 W. Division St.; 1-773-384-9700
The southern fare here is offered in both classic and “re-imagined” dishes over shared tables and family-style meals. Moderate

Chicago Firehouse Restaurant
1401 S. Michigan Ave.; 1-312-786-1401
Escargot and vegetable strudel share the appetizer menu at this top-rated steakhouse, housed in a turn-of-the-century firehouse, complete with the original fire poles. Casual or formal dining is available and wines are mostly American. Expensive

Deca
160 E. Pearson St.; 1-312-573-5160
Alongside the fountain in the lobby of the Ritz Carlton, this art deco-themed brasserie presents reasonably priced entrees, a large selection of salads and even sliders in a sophisticated setting. It’s also a 2014 Michelin Bib Gourmand winner. Moderate

The Gage
24 S. Michigan Ave.; 1-312-372-4243
Housed in a 1930s hat factory across from Millennium Park, The Gage offers an atmosphere accentuated by brass, leather and subway tile. Comfort food is paired with a roster of 30 bottled beers and interesting small-batch whiskeys. Moderate

Girl & The Goat
809 W. Randolph St.; 1-312-492-6262
Make a reservation today (they fill up months out) for this unique Chicago favorite, featuring celebrity chef Stephanie Izard. She serves not just American food, but what some critics have termed “Chicago cuisine.” Moderate
Grace
652 W. Randolph St.; 1-312-234-9494
Diners choose from one of two prix-fixe menus, one all vegetable, that showcase local favorite Curtis Duffy’s creative contemporary cuisine. **Very Expensive.**

NEW Hubbard Inn
110 W. Hubbard St.; 1-312-222-1331
Hubbard Inn features European inspired small plates, quintessential mid-century cocktails and old world décor. **Moderate**

Lillie’s Q
1856 W. North Ave.; 1-773-772-5500
After Grandma Lillie’s recipe won the Memphis in May BBQ pork shoulder competition for five years straight, grandson, Chicago chef Charlie McKenna, opened this trendy Wicker Park BBQ joint. Prepare to sip moonshine out of mason jars while waiting for a table. **Moderate**

MK, The Restaurant
868 N. Franklin St.; 1-312-482-9179
Creative contemporary dishes superbly offset by stylish ambiance. Exposed bricks and beams reflect the building’s past as a paint factory. **Expensive**

North Pond
2610 N. Cannon Dr.; 1-773-477-5845
Seasonal Midwestern and French dishes served in well-executed arts-and-crafts-style. A former skaters’ warming station, this popular restaurant is located in the heart of Lincoln Park on a pristine lagoon with a city skyline view. **Expensive**

Park Grill
11 N. Michigan Ave.; 1-312-521-7275
Chicago’s answer to New York’s Tavern on the Green, Park Grill features floor-to-ceiling windows for a great view of Millennium Park. The unpretentious menu includes a double-cut pork chop with port sauce. **Expensive**

Perennial Virant
1800 N. Lincoln Ave.; 1-312-981-7070
As a farm-to-table restaurant, Perennial Virant couldn’t be better positioned than its location across Clark Street from Lincoln Park’s Green City Market. Watch for Chef Paul Virant’s hallmark pickles. **Moderate**

Petterino’s
150 N. Dearborn St.; 1-312-422-0150
Located in the southeast corner of the new Goodman Theatre building, Petterino’s specializes in quality steaks, pastas and salads. The room and the food are substantial at this unmistakably 1940s Loop-style restaurant. **Expensive**

The Publican
837 W. Fulton Market; 1-312-733-9555
It’s no surprise that this woody beer hall features an extensive selection of global beers, but the standout here is the menu that centers on seafood and pork and house-made charcuterie. **Inexpensive**

Sable
505 N. State St.; 1-312-755-9704
Many items at this contemporary spot in the Hotel Palomar come in both large and small portions to allow for sharing. Coined a “gastro-lounge,” the menu features a large number of vegetarian selections and focuses on pairing with an extensive cocktail selection. **Moderate**

Sixteen
401 N. Wabash Ave.; 1-312-588-8030
The restaurant in Donald Trump’s new Chicago building features a mammoth Swarovski crystal chandelier and two-story high windows showcasing sweeping views of the Wrigley Building, Tribune Tower and Lake Michigan. The menu promises bold flavors and top-grade ingredients. **Very Expensive**

Table Fifty-Two
52 W. Elm St.; 1-312-573-4000
Art Smith, chef to Oprah and best-selling cookbook author, opened this small, 35-seat restaurant. Heavier weekend menu includes fried chicken, waffles and biscuits and gravy served with chicken gumbo. **Expensive**

ASIAN

Aria
200 N. Columbus Dr.; 1-312-444-9494
The Fairmont Hotel has recreated Aria as a Pan Asian restaurant, with an emphasis on seafood. A glass-enclosed private dining room adds to Aria’s flair. **Very Expensive**

Japonais
600 W. Chicago Ave.; 1-312-822-9600
Combining industrial and chic decor in a converted industrial building, Japonais offers traditional Japanese sushi and fried rice tastes just like the Hong Kong version, with more ambitious offerings such as wok-fried lobster also on the menu. **Expensive**

Shanghai Terrace
108 E. Superior St.; 1-312-573-6744
The Peninsula Hotel’s Asian restaurant sparkles with silver and red lacquer. The fried rice tastes just like the Hong Kong version, with more ambitious offerings such as wok-fried lobster also on the menu. **Expensive**

Sunda
110 W. Illinois St.; 1-312-644-0500
Communal tables, a sushi bar and a hipster scene set the stage for a sleek new Asian experience. The “Devil’s Basket” combines red chilies, toasted garlic and soft-shell crabs served up in a metal bucket. **Moderate**

CAJUN/CREOLE

Heaven on Seven on Rush
600 N. Michigan Ave.; 1-312-280-7774
Spicy Cajun and Creole dishes served steps from Michigan Avenue, up a steep escalator. “Feed me” fixed price menus, dependent on the chef’s whims, are unforgettable. Sunday features a New Orleans-style brunch. **Moderate**

CONTINENTAL

Au Cheval
800 W. Randolph St.; 1-312-929-4580
Enjoy Au Cheval’s European take on a corner diner, including a pork porterhouse. For an additional treat try some of the more than 30 international beers on tap or select from the cocktail or wine list. **Inexpensive**

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CUBAN

Habana Libre
1440 W. Chicago Ave.; 1-312-243-3303
It may worth practicing some Spanish for this Cuban food. Try the rellenas—ground beef encased in fried bread—as well as mashed potatoes with mango sauce and crusty empanadas with guava paste and cheese. Inexpensive

FRENCH

Balsan
11 E. Walton St.; 1-312-646-1400
The décor of Balsan, located in the European-styled Elysian Hotel, was inspired by fashion designer Coco Chanel. The trendy brasserie offers selections from the raw bar as well as house-made charcuterie and several organ meat dishes. Expensive

Bistronomic
840 N. Wabash Ave.; 1-312-944-8400
Bistro fare with a touch of extra oomph is served alongside an excellent wine list in the heart of the Gold Coast. Burgundy walls with French photographs and mirrors set the tone for an intimate evening. Moderate

Chez Joel
1119 W. Taylor St.; 1-312-226-6479
A pretty French bistro blossoming in the middle of Little Italy. Moderate

Chez Moi
2100 N. Halsted St.; 1-773-871-2100
Classic French bistro served in a comfortable Lincoln Park setting. Moderate

Les Nomades
222 E. Ontario St.; 1-312-649-9010
Flawless French food served in a downtown mansion with a picturesque entrance is so entrancing, it is occasionally used as the setting for movie scenes. Very Expensive

Maude’s Liquor Bar
840 W. Randolph St.; 1-312-243-9712
Catch the ultra, urban scene at Maude’s. The downstairs walks the line between restaurant and bar, where basic drinks and food are served. The surprisingly dark upstairs bar offers serious specialty cocktails and does out whiskey bottles on the honor system. Moderate

Paris Club
59 W. Hubbard St.; 1-312-595-0800
Paris Club took the French out of French dining. The mostly English menu is geared for a younger generation, although many traditional, much loved French dishes are served alongside small plates at this beautiful River North jewel. Moderate

FUSION

Roy’s
720 N. State St.; 1-312-787-7599
Combining French and Asian techniques, Hawaiian fusion cuisine includes hibachi-grilled salmon, blackened tuna and barbecued baby back ribs. Watch the exhibition kitchen from the bar or dining room. Expensive

GREEK

NEW The Parthenon
314 S. Halsted St.; 312-726-2407
Go for the flaming cheese, stay for everything else on the menu at this longtime Greektown mainstay, which serves up a fabulous array of flavors, from meat and fish to vegetarian and gluten-free options. Moderate.

INDIAN

India House
59 W. Grant Ave.; 1-312-645-9500
The 150-item menu offers a vast array of India’s offerings, from standard fare to street fair delicacies. A glass-enclosed kitchen encourages proud chefs to perform. Specialty drinks allow the adventurous to experiment. Moderate.

ITALIAN

Gioco
1312 S. Wabash Ave.; 1-312-939-3870
A big-portioned, contemporary Italian feast in a Prohibition-era speakeasy. In line with a trattoria, the menu offers tortellini, beef and octopus carpaccios, pizza, veal scaloppini, rabbit, mussels and seafood. Moderate

NEW Italian Village
71 W. Monroe St.; 1-312-332-7005
Close to the city’s theater district, this famous Italian eatery opened in 1927 and has been following its founder’s simple philosophy ever since: Make good, simple food, serve it in ample portions and offer it with warm Italian courtesy. Moderate

Osteria Via Stato
620 N. State St.; 1-312-642-8450
Get the feeling of being transported to Italy with waiters swooping in serving course after course. Select a main course from a chalkboard menu and let the kitchen decide the rest. Seconds are available on everything but entrées. Expensive

Piccolo Sogno
464 N. Halsted St.; 1-312-421-0077
With Murano glass chandeliers, Vene- tian-plastered walls, an Italian marble bar and a terrazzo floor, executive chef Tony Priolo essentially transforms this Chicago eatery into his Naples home. Moderate

Prosecco
710 N. Wells St.; 1-312-951-9500
The menu at this River North restaurant provides the opportunity to sample cuisine from all 20 regions of Italy, including homemade pastas and risottos. Prosecco also offers the city’s largest selection of the restaurant’s namesake beverage. Moderate

Rosebud on Rush
720 N. Rush St.; 1-312-266-6444
Handmade pastas are a trademark of this quaint two-story Italian restaurant in a beautifully renovated brownstone. Just a block away from Michigan Avenue, Rosebud is a great pick for a shoppers’ lunch or a romantic evening. Expensive

Splagia
980 N. Michigan Ave.; 1-312-280-2750
Sophisticated Italian creations are appropriate for this breathtaking room filled with those desiring to see and be seen. This extremely popular destination boasts white tablecloths, large windows and first-class service. Very Expensive
Latin American

Carnivale
702 W. Fulton Market; 1-312-850-5005
The attention-grabbing décor, music and menu all contribute to a festive ambiance. Enjoy ceviches along with heartier fish and meat creations from Brazil, Colombia, Cuba and Puerto Rico. Expensive

Mediterranean

Nellcôte
833 W. Randolph St.; 1-312-432-0500
Named after the French villa that hosted the Rolling Stones while they recorded “Exile on Main Street,” this Mediterranean restaurant exudes a similar decadence. Enjoy the beautiful crowd, loud music, elaborate marble and wood floors and enormous chandeliers. Moderate

New

Uncle Julio’s Hacienda
855 W. North Ave.; 1-312-266-4222
This always-hopping Lincoln Park hipster spot serves up authentic, border-style Tex-Mex fare that mirrors the original cooked up by cowboys on the plains a century ago. Moderate

Zapatista
1307 S. Wabash Ave.; 1-312-435-1307
Named for Mexican revolutionary Emiliano Zapata, this upscale venue offers a broad menu including grilled lobster tails and Negro Modelo marinated filet mignon. Pictures of revolutionaries accent the walls. Moderate

The Purple Pig
500 N. Michigan Ave.; 312-464-1744
Antipasti, charcuterie, “smears” and fried specialties share this pork-focused menu that includes Italian, Spanish and even New Orleans influences. The affordable wine list rounds out the casual experience. Inexpensive

Sip & Savor Social
Skyline Ballroom,
3rd Floor, McCormick Place, West Building
Wednesday, December 3, 5:00 pm – 7:00 pm
Mark the RSNA Centennial with drinks, entertainment and tastings by some of Chicago’s top restaurants. Don’t miss the celebration of the century, featuring:

You can add tickets to your registration for only $40 per person.
SEAFOOD

**Boka**  
1729 N. Halsted St.; 1-312-337-6070  
The theme under the unique fabric-stretched ceiling is seafood. Start with seared Maine scallops with cauliflower puree, tartar of Atlantic salmon or the raw bar and add an entrée such as steak or pan-seared grouper. **Expensive**

**Cape Cod Room**  
140 E. Walton St.; 1-312-787-2200  
The Cape Cod Room at the venerable Drake Hotel serves fresh seafood in a comfortable, cozy setting reminiscent of a seaside saloon. **Expensive**

**Devon Seafood Grill**  
39 E. Chicago Ave.; 1-312-440-8660  
Michigan Avenue shoppers get a break from seemingly mandatory department store restaurant lunches and North Michigan Avenue hotel guests get a break from hotel bars. A wraparound bar is a local favorite. **Moderate**

**GT Fish & Oyster**  
531 N. Wells St.; 1-312-929-3501  
The “oyster wave” that hit Chicago is readily apparent in this Cape Cod-inspired room. Although fish and oysters are a common concept, the presentations and added touches are innovative and noteworthy. **Expensive**

**Shaw’s Crab House**  
21 E. Hubbard St.; 1-312-527-2722  
The Atlantic, Gulf and Pacific seafood suppliers that stock this restaurant daily are pictured on the walls of the Blue Crab Lounge, a New Orleans-themed oyster bar with blues and torch music on the sound system. **Expensive**

**SPANISH**

**Café Ba-Ba-Reeba!**  
2024 N. Halsted St.; 1-773-935-5000  
At this festive hotspot, rhythmic Spanish music greets guests before the hosts can. Café Ba-Ba-Reeba! specializes in paella, sangria and tapas. **Inexpensive**

**Mercat a La Planxa**  
638 S. Michigan Ave.; 1-312-765-0524  
This Catalan restaurant in the restored Blackstone Hotel offers grilled-to-order tapas. The giant windows in the stunning Spanish modern room offer beautiful views of Grant Park. **Moderate**

**STEAK**

**Chicago Chop House**  
60 W. Ontario St.; 1-312-787-7100  
This restaurant features 1,400 photos of musicians, gangsters and every Chicago mayor. **Expensive**

**Chicago Cut Steakhouse**  
300 N. LaSalle St.; 1-312-329-1800  
In addition to great steaks, diners are treated to sweeping views of the Chicago River and the majestic buildings along Wacker Drive which fronts Chicago’s Loop. Keep an eye out for politicos including Chicago Mayor Rahm Emanuel. **Very Expensive**

**David Burke’s Primehouse**  
616 N. Rush St.; 1-312-660-6000  
At this ultramodern steakhouse, dry-aged steaks are displayed in a special temperature and humidity-controlled salt cave and appetizers such as angry lobster share the menu with unreasonably large steaks. **Expensive**

**Fulton’s on the River**  
315 N. LaSalle St.; 1-312-822-0100  
Although Fulton’s can please everyone—seafood, steaks and sushi are all on the menu—this beautiful riverside restaurant has possibly the best oysters in the country. Carefully matched wines round out the offerings. **Moderate**

**SUSHI/JAPANESE**

**Coast Sushi**  
2045 N. Damen Ave.; 1-773-235-5775  
Coast is the gold standard among Chicago sushi enthusiasts. Excellent Italian preparations of chicken, lamb and seafood are also available. **Expensive**

**VEGETARIAN**

**Green Zebra**  
1460 W. Chicago Ave.; 1-312-243-7100  
Vegetarians rarely have an extensive choice in fine dining but Green Zebra has turned the tables, offering upscale vegetarian dishes in a fine dining setting. Carnivores will often find chicken and fish on the menu. **Expensive**
RSNA 2014 Honorees

RSNA will pay tribute to a number of distinguished physicians during the 100th Scientific Assembly and Annual Meeting. All presentations will take place in the Arie Crown Theater.

Honorary Members

Presented Monday, Dec. 1 • 1:30 p.m.

Honorary Membership in RSNA is presented for significant achievements in the field of radiology. At RSNA 2014, Honorary Membership will be given to Zheng Yu Jin, M.D., of Beijing, Markus Schwaiger, M.D., of Munich, Germany, and Kaori Togashi, M.D., Ph.D., of Kyoto, Japan.

An internationally renowned leader and educator, Zheng Yu Jin, M.D., is widely credited with advancing the popularization and application of cardiac interventional therapy techniques throughout his native China in the late 1980s through the early 1990s. Dr. Jin has become well known as a national and international advocate of multi-detector CT techniques over the past two decades. Now, as vice-chair of the Chinese Society of Radiology (CSR), his priority is MR technique generalization nationwide.

Dr. Jin is a professor of interventional radiology and diagnostic radiology and chair of the Department of Radiology at Peking Union Medical College Hospital (PUMCH), Beijing, where he has spent the majority of his career.

After graduating as a medical doctor in 1984, Dr. Jin joined PUMCH where he quickly ascended the ranks from resident, chief resident and attending physician to associate professor by 1993. Dr. Jin has held his current position since 1996. From 1990 to 1991, Dr. Jin completed advanced studies at Loma Linda University Medical Center, California, where he trained under renowned interventional radiologist Francis Y.K. Lau, M.D.

Dr. Jin trained in cardio-intervention and neuro-intervention, as well as peripheral intervention, which was very rare in China at that time.

As an educator for more than 30 years, Dr. Jin has been described by his colleagues as devoting his mind and spirit to the clinical radiologic education of Chinese medical students and post-graduate residents. Dr. Jin has authored and co-authored over 200 national and international peer-reviewed publications, along with authoring and compiling award-winning teaching materials and atlases (including two bilingual atlases).

Dr. Jin has served as president of the Beijing Society of Radiology since 2009. He was elected as chief secretary and vice-president of the CSR from 2006 to 2010 and from 2010 to 2014, respectively.

Dr. Jin has been awarded the National Prize for Progress in Science and Technology (twice), the Ministry of Health Prize for Progress in Science and Technology, and the Chinese Medical Science and Technology Prize.

Markus Schwaiger, M.D., is an internationally known researcher, educator, author and editor whose work has shaped the development of multimodal molecular imaging, particularly in cardiology. He is director of the Department of Nuclear Medicine at the Technische Universität of Munich, Germany, and also serves as an adjunct professor of radiology at the University of Michigan in Ann Arbor.

Dr. Schwaiger’s research portfolio reflects the development of PET from a research tool in cardiology to a worldwide-accepted clinical standard procedure in oncology. His recent articles address integrated whole-body PET/MR imaging and the use of PET to assess metabolic response and guide treatment of cancer. He currently serves as coordinator of a large center grant that addresses the role of imaging in selecting and monitoring targeted cancer therapy in preclinical models. He is involved in European Research consortia addressing endoscopic PET imaging (EndoTOFPET) as well as PET inserts for combined MR/PET instrumentation. In 2012, he received an advanced grant award of the European Research Council (ERC).

In addition to his 748 peer-reviewed publications in international scientific...
Dr. Schwaiger has served in editorial positions for more than a dozen scientific publications, including the *Journal of Nuclear Cardiology*, *Journal of Nuclear Medicine* and *European Heart Journal*.

Dr. Schwaiger has lent his expertise to a spectrum of professional societies and administrative entities for more than 20 years, including service as president of the European Association of Nuclear Medicine 2008 Congress in Munich. He serves on the RSNA Molecular Imaging Committee.

Among the numerous awards Dr. Schwaiger has received are the Distinguished Scientist Award of the Academy of Molecular Imaging, von Hevesy Medal of the Hungarian Society of Nuclear Medicine, and Paul C. Aebersold Award of the Society of Nuclear Medicine.

Kaori Togashi, M.D., Ph.D., has spent more than 30 years researching and publishing studies expanding the horizon for MR as it applies to gynecology. Dr. Togashi’s pioneering work has garnered attention from radiology and bioengineering entities.

Dr. Togashi is a professor and chair in the Department of Diagnostic Imaging and Nuclear Medicine at Kyoto University Graduate School of Medicine. When promoted to the position in 2004, she became the first woman to chair a department at the medical school of Kyoto University and the first woman to chair a department at a national university in Japan.

Dr. Togashi earned her medical degree at Kyoto University. After completing her residencies, she attended the Graduate School of Medicine at Kyoto University and received her doctorate in medical science. While working on her doctorate, Dr. Togashi was involved in very early studies of body MR imaging. She authored several articles including “Uterine Cervical Cancer: Assessment with High-Field MR Imaging,” published in *Radiology* in 1986. Since then, she has published several books and nearly 300 articles in peer-reviewed journals in English. Dr. Togashi has been a reviewer for many journals including *Radiology* and *RadioGraphics*.

Dr. Togashi’s recent areas of interest are functional body MR, including cine MR to evaluate uterine peristalsis, diffusion-weighted images in oncology and diffusion tensor imaging of the uterus. Cine MR for the uterus has attracted interest not only from the radiology and gynecology specialties, but also from the bioengineering realm as a new tool to elucidate biomechanics of the uterine function. Dr. Togashi received honorary membership in the European Society of Radiology, fellowship in the International Society for Magnetic Resonance in Medicine and the gold medal of the European Society of Urogenital Radiology. Dr. Togashi serves on the RSNA International Advisory Committee and also has served on the Education Exhibit Awards Committee in Uroradiology at the RSNA annual meeting.

**RSNA 2014 Dedications**

**RSNA Meeting Program**
The scientific and educational program of the 100th Scientific Assembly and Annual Meeting of the Radiological Society of North America is dedicated to all those who have gone before us—to those who have established and joined the RSNA, and helped our Society pursue its mission and realize its vision for the past 100 years:

- The committee members who develop the annual meeting program and all RSNA activities
- The faculty and attendees for educational courses
- The researchers and attendees for scientific sessions
- The authors, reviewers, and readers of our journals
- The developers and users of informatics technology
- The donors who support and grantees who conduct radiologic research
- The members all over the world who, inspired by our Society’s mission and vision, have spent their lives improving the care of their patients
- The residents and fellows who will pursue our Society’s mission and help realize its vision into its next century.

**Annual Oration in Diagnostic Radiology**
The Annual Oration in Diagnostic Radiology is dedicated to the memory of Henry N. Wagner Jr., one of the founders of the specialty of nuclear medicine.
Over the course of his remarkable 36-year career in radiology, the name **Gary J. Becker, M.D.**, has become synonymous with the word “leader.”

In addition to serving as 2009 RSNA President, Dr. Becker served as executive director of the American Board of Radiology (ABR) from 2007 until his retirement in mid-2014. Among his many accomplishments, Dr. Becker oversaw ABR’s critical transition from oral to computer-based exams for certification in diagnostic radiology.

Dr. Becker is a Chicago native who earned his undergraduate and medical degrees from Indiana University, where he completed his residency in diagnostic radiology and served as a professor and chief of the vascular section. In 1990, after 20 years at Indiana University, he moved to Miami Cardiac and Vascular Institute serving as director of interventional radiology and ultimately as assistant medical director of the institute and medical director of clinical research until 2004.

After serving a year and a half as branch chief of image guided intervention in the Division of Cancer Treatment and Diagnosis at the National Cancer Institute, Dr. Becker moved to the University of Arizona in 2005, serving as professor in the interventional section of the Department of Radiology.

An RSNA member since 1979, Dr. Becker volunteered in many capacities before joining the Board of Directors in 2001, serving as secretary-treasurer designate for one year and then Board liaison for science for four. He then served as Board chairman, president-elect and president. Dr. Becker has served as a *Radiology* Editorial Board member and as a consultant to the *Radiology* Editor.

Dr. Becker served six years on the ABR Board of Trustees followed by two years as associate executive director for diagnostic radiology and subspecialties.

After 28 years of service to the Society of Interventional Radiology (SIR), SIR in 1995 re-named its award for the outstanding paper presentation by a young investigator, “The Dr. Gary J. Becker Young Investigator Award.” He received the SIR gold medal in 2008.

Founding editor of the *Journal of Vascular and Interventional Radiology*, Dr. Becker has served as a manuscript reviewer, editorial board member, associate editor and editor for more than 20 journals.

World renowned achievements in cancer research, education and clinical care make **Allen S. Lichter, M.D.**, an ideal leader of his peers. Dr. Lichter has served as chief executive officer of the American Society of Clinical Oncology (ASCO) since 2006.

With research focusing on breast cancer, Dr. Lichter was an early advocate of the breast conserving approach and conducted one of the trials that found the use of lumpectomy and radiation therapy to be as effective as mastectomy. This work, along with other trials conducted in the U.S. and Europe, revolutionized breast cancer treatment standards.

Dr. Lichter previously served as the director of the Radiation Therapy Section of the National Cancer Institute’s Radiation Oncology Branch. As chair and professor of radiation oncology and dean of the medical school at the University of Michigan, Dr. Lichter introduced an innovative curriculum, oversaw creation of a new Biomedical Science Research facility and was a prolific fundraiser.

At ASCO, Dr. Lichter has overseen projects including the CancerLinQ™ rapid learning system and the Quality Oncology Practice Initiative. His tenure also has seen the renaming of the society’s philanthropic arm as the Conquer Cancer Foundation, of which Dr. Lichter was founding chairman.

A former co-editor of *Oncology*, Dr. Lichter also served in editorial positions with the *Journal of the National Cancer Institute, International Journal of Radiation Oncology, Biology, Physics, and Journal of Clinical Oncology*.

Dr. Lichter received the gold medal of the American Society for Radiation Oncology and was elected to membership in the Institute of Medicine of the National Academies of Science. He is an honorary member of the American Association of Physicists in Medicine.
Dr. Pisano has broken down barriers in her professional career, becoming the first woman dean of the College of Medicine at the Medical University of South Carolina (MUSC) in 2010. But her biggest contributions to radiology have been the research and testing she has done to integrate emerging technology into breast imaging. Her groundbreaking study, Digital Mammographic Imaging Screening Tool (DMIST), was the largest clinical trial ever led by a radiologist and provided essential information about the efficacy of digital mammography.

Dr. Pisano served MUSC as vice-president for medical affairs and dean of the College of Medicine from 2010 to 2014. Previously Dr. Pisano had served in numerous positions at the University of North Carolina at Chapel Hill, including vice-dean for academic affairs in the School of Medicine, Kenan Professor of Radiology and Biomedical Engineering, founding director of the Biomedical Research Imaging Center (BRIC) and director of the Translational and Clinical Sciences Institute. She also served as founding chief of breast imaging at UNC Hospitals.

In addition to leading DMIST, Dr. Pisano has served as principal investigator for over 30 other studies. She has authored or co-authored 145 articles appearing in peer-reviewed journals, and has been a reviewer for more than a dozen journals, including *Radiology* and *RadioGraphics*.

Dr. Pisano is past-president of the Association of University Radiologists (AUR) and American Association for Women Radiologists. In 2008 she was elected as a member of the Institute of Medicine of the National Academy of Sciences. She is a recipient of gold medals from AUR and the American Roentgen Ray Society.

**Alexander R. Margulis Award for Scientific Excellence**

This annual award recognizes the best original scientific article published in *Radiology*. Named for Alexander R. Margulis, M.D., a distinguished investigator and inspiring visionary in the science of radiology. The name of the honoree will be revealed at the beginning of the Monday Plenary Session. After the award is presented, reprints of the honored article will be available for free at the Journals, News & RadiologyInfo.org booth in RSNA Services.

**Other Awards**

**Trainee Research Prize**

RSNA awards the Trainee Research Prize to honor an outstanding scientific presentation in each subspecialty presented by a resident/physics trainee, fellow or medical student. One trainee research prize in breast imaging is endowed by Tapan K. Chaudhuri, M.D.

A list of Trainee Research Prize recipients can be viewed in the Arie Crown Theater lobby.

**Molecular Imaging Travel Award**

The Travel Awards for Young Investigators in Molecular Imaging support candidates invited to present high-quality science. To be eligible, abstract presenters or poster exhibitors must be pre-doctoral students or have been awarded their doctoral degrees no more than seven years prior to submission. A list of recipients of the Molecular Imaging Travel Awards can be viewed in the Nuclear Medicine/Molecular Imaging Campus.

**Canada Presents and Korea Presents**

In recognition of the contributions from Canada and Korea for the “Canada Presents” and “Korea Presents” sessions, select proffered abstract presenters receive an award from RSNA. See a list of the presenters at the Canada Presents booth (South Building, Hall A: 1218) and Korea Presents booth (South Building, Hall A: 1118).
Outstanding Researcher and Educator

Presented Sunday, Nov. 30 • 8:30 a.m.

RSNA will honor two individuals at RSNA 2014 for their contributions to research and education. Theodore S. Lawrence, M.D., Ph.D., of Ann Arbor, Mich., is Outstanding Researcher. Paula J. Woodward, M.D., of Salt Lake City, is Outstanding Educator.

Outstanding Researcher

Theodore S. Lawrence, M.D., Ph.D., established himself as a world-renowned researcher for his pioneering use of radiation for the treatment of intrahepatic cancers. In particular, he led a team that developed a model that predicts the maximum safe dose of radiation that can be given to liver tumors, and showed that these higher doses could cure some previously incurable cancers.

Dr. Lawrence is the chair of the Department of Radiation Oncology and the Isadore Lampe Professor of Radiation Oncology at the University of Michigan, and co-chair of the Radiation Sciences Program of the University of Michigan Comprehensive Cancer Center. He is president of the Radiation Oncology Institute and the Society of Chairs of Radiation Oncology.

Dr. Lawrence joined the faculty of the University of Michigan in 1987, following a fellowship in medical oncology and a residency in radiation oncology at the National Cancer Institute. He received his research degree in cell biology from Rockefeller University, followed by his medical degree from Cornell University and an internal medicine residency at Stanford University.

Dr. Lawrence is a member of the Board of Scientific Advisors of the National Cancer Institute and a member of the Institute of Medicine of the National Academy of Science. He is an editor of Translational Oncology, The Cancer Journal, Seminars in Radiation Oncology, and Cancer Research. Dr. Lawrence is past-president of the American Society of Radiation Oncology (ASTRO), and former chair of the National Cancer Institute Board of Scientific Councilors, and a member of the Board of Directors of the American Society of Clinical Oncology (ASCO). He has received the ASTRO gold medal and an ASCO statesman award.
**Outstanding Educator**

Teaching has been the life ambition for **Paula J. Woodward, M.D.**, which explains why the achievement she takes the most pride in is being named Teacher of the Year a total of six times from three institutions during her career.

Dr. Woodward has published nearly 30 peer-reviewed journal articles, as well as 10 other books and nearly 200 chapters. She served as a *RadioGraphics* contributing editor from 2002 to 2006.
2014 Honored Educator Award

To be recognized at RSNA 2014 are the recipients of the RSNA Honored Educator Award. Established in 2011, the award recognizes RSNA members who have produced RSNA educational resources in the past calendar year. This annual award is given to individuals invested in furthering the profession of radiology by delivering high-quality educational content in their field of study. To be eligible for the award, members may participate in qualifying activities including:

• Serving as faculty at one or more of RSNA’s educational meetings
• Authoring an education exhibit, Quality Storyboard and/or Cases of the Day track for the RSNA Annual Meeting
• Authoring educational articles in Radiology and RadioGraphics
• Authoring online education materials, including online modules or original SAMs, and/or creating CME questions in support of repurposed online education.
• Donating a refresher course and writing CME questions for online learning

Eligible candidates must also participate in at least two educational categories to be considered for the award and may not earn credit for more than two activities in any given category. Based on the number of qualifying activities completed, the most eligible RSNA members are presented with the Honored Educator award in recognition of their contributions. This year’s recipients are:

Suhny Abbara, M.D.
Fatih Akisik, M.D.
Yoshimi Anzai, M.D.
Alexander A. Bankier, M.D., Ph.D.
Jenny T. Bencardino, M.D.
Sonia L. Betancourt Cuellar, M.D.
Sanjeev Bhalla, M.D.
Julie David, M.D.
David J. DiSantis, M.D.
Ronald L. Eisenberg, M.D., J.D.
Mona M. El Khoury, M.D.
Khaled M. Elsayes, M.D.
Elliot K. Fishman, M.D.
Valerie P. Jackson, M.D.
Hernan Jara, Ph.D.
Ella A. Kazerooni, M.D.
Bharti Khurana, M.D.
Lucie Lalonde, M.D.
Ramit Lamba, M.D.
David B. Larson, M.D.
Meghan G. Lubner, M.D.
Isabelle Trop, M.D., M.P.H.
Katarzyna J. Macura, M.D., Ph.D.
Santiago Martinez-Jimenez, M.D.
Katherine E. Matuene, M.D.
Christine O. Menias, M.D.
Frank H. Miller, M.D.
Paul G. Nagy, Ph.D.
Perry J. Pickhardt, M.D.
Prabhakar Rajiah, M.D., F.R.C.R.
Gautham P. Reddy, M.D.
Caroline Reinhold, M.D., M.Sc.
Carlos S. Restrepo, M.D.
Zehava S. Rosenberg, M.D.
Osamu Sakai, M.D., Ph.D.
Kumaresan Sandrasegaran, M.D.
Leslie M. Scoult, M.D.
Scott Sheehan, M.D.
Aaron D. Sodickson, M.D., Ph.D.
Jorge A. Soto, M.D.
Temel Tirkes, M.D.
Alex Towbin, M.D.
RSNA 2014
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Join us for the Celebration of a Century

Centennial Website
Begin celebrating with us from home at RSNA.org/Centennial. Explore milestones, share stories, and vote in the Image Contest before October 31.

Sip & Savor Social
Wednesday, December 3, 5:00 – 7:00 PM
Skyline Ballroom, 3rd Flr, McCormick Place, West Building
Celebrate our 100th annual meeting with drinks, entertainment, and tastings by some of Chicago’s top restaurants.

Centennial Showcase
Lakeside Center, Hall D
Explore an onsite experience to discover the advancements that shaped radiology. The Showcase will feature a historical timeline, special welcome from a virtual Wilhelm Roentgen, Cases of the Century, and more.

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With the vast offerings RSNA 2014 provides, it's impossible to see it all at McCormick Place. Add the Virtual Meeting to your registration to access selected offerings, both live and on-demand.

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RSNA/AAPM Member
Only $100
FREE for RSNA Members-in-Training, RSNA Medical Student Members and Retired RSNA Members.

Non-Member
$300

The Virtual Meeting is available during RSNA 2014 and on-demand until December 19 at 4:00 pm Chicago time. Earn CME for live sessions only. Live sessions available for AMA PRA Category 1 Credit™. NEW! Live sessions earn Category A and A+ credit for technologists. No CME credits are awarded for viewing on-demand sessions.
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