

PRESIDENT'S LETTER

Welcome to **RSNA 2015**

Dear Colleagues,

It is my pleasure to welcome you to RSNA's 101st annual meeting where you will be a part of the historic celebration of the Society's Centennial. Together we will witness the remarkable technological innovations being made in our field and the enormous strides our profession is making toward improving our patients' care in the future.

This year, as a new century begins for RSNA, we have special highlights for you demonstrating that "Innovation is the Key to our Future." Step into the future of radiology through Centennial Showcase exhibits featuring innovations such as 3-D printing, virtual holography, personalized medicine, and more. There has never been a more exciting time for radiology, nor a more fulfilling time in terms of our potential impact on the health of the patients we serve.

Your presence here demonstrates your commitment to radiology's future and your recognition of the essential role you play in that future. RSNA's selection of hundreds of educational courses and exhibits and thousands of scientific presentations, as well as our always robust technical exhibition, offer you an unmatched experience to learn, witness and collaborate. Full participation in the meeting can earn you up to 93.75 AMA PRA Category 1 Credits™.

While you are at RSNA 2015, make time in your schedule for special offerings and presentations, such as the Mexico and Germany Presents sessions, which provide insights into the advancements being made by our colleagues in those countries. Enhance your RSNA 2015 experience by attending courses via the Virtual Meeting, during the week of the annual meeting or on-demand until December 21.

Special gaming courses using RSNA Diagnosis Live™ are back. These popular question-and-answer sessions allow you to use your mobile device to respond to imaging case challenges while you monitor your individual and team's performance throughout the course.

The RSNA Research and Education (R&E) Foundation is hosting a silent auction in conjunction with RSNA 2015. Visit the R&E Foundation Booth to discover the unique experiences being auctioned or go online to make your bid and invest in radiology's future.

Remember also to take time to connect with your peers during RSNA 2015 – this week offers you unparalleled opportunities for networking with colleagues and luminaries from around the globe.

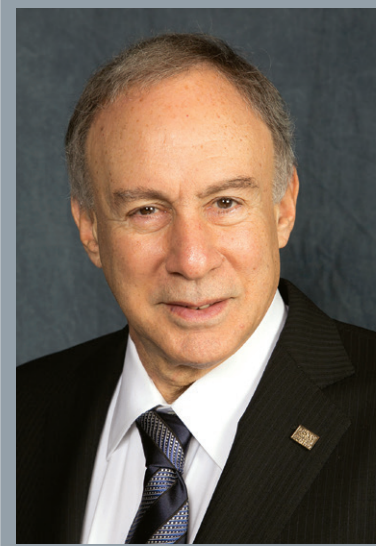
On behalf of the RSNA Board of Directors, volunteers and staff, I wish you an extraordinary, memorable and productive week in Chicago.

Sincerely,

Ronald L. Arenson, MD

RSNA President

RONALD L. ARENSON, MD





2015 RSNA AT A GLANCE

Saturday, November 28, 2015

12:00–2:00 PM

SPPH01 AAPM/RSNA Physics Tutorial for Residents

1:00–5:00 PM

SPSP01 Sesión del Colegio Interamericano de Radiología (CIR) en Español

SPGW01 NIH Grantsmanship Workshop

SPNI01 NIH SBIR/STTR Program

2:15–4:15 PM

SPPH02 AAPM/RSNA Tutorial on Equipment Selection

Sunday, November 29, 2015

8:30–10:15 AM

PS10 Opening Session

10:15–10:35 AM

Business Session

10:45 AM–12:15 PM

VSPD11 Pediatric Radiology Series

SP0111 Oncodiagnosis Panel

SSA Scientific Paper Sessions

11:00 AM–12:30 PM

Informatic Courses

12:30–1:30 PM

Poster Discussions

1:30–6:00 PM

VSI011 Interventional Oncology Series

2:00–3:30 PM

RC100s Educational Courses

RC113 Pediatric Radiology Series

4:00–5:30 PM

Informatic Courses

4:00–5:45 PM

PS12 Image Interpretation Session

Monday, November 30, 2015

7:15–8:15 AM

SPSC-SPSH Hot Topics/Controversies Sessions

SPDL20 RSNA Diagnosis Live™

8:30–10:00 AM

MSAS21 Associated Sciences Refresher Course

MSCM21 Case-based Review of Magnetic Resonance

MSMC21 Cardiac CT Mentored Case Review

MSR021 BOOST: GYN—Oncology/Anatomy

MSR024 BOOST: Head & Neck—Oncology/Anatomy

MSMI21 Molecular Imaging Symposium

RC200s Educational Courses

8:30 AM–12:00 PM

RC215 Breast Series

RC201 Chest Series

RC208 Emergency Radiology Series

RC209 Gastrointestinal Series

RC207 Genitourinary Series

RC214 Interventional Radiology Series

RC204 Musculoskeletal Radiology Series

RC205 Neuroradiology Series

RC211 Nuclear Medicine Series

RC213 Pediatric Radiology Series

RC225 Physics Series

10:30 AM–12:00 PM

Informatic Courses

MSAS22 Associated Sciences Refresher Course

MSCM22 Case-based Review of Magnetic Resonance

MSR022 BOOST: GYN—Integrated Science and Practice

MSR025 BOOST: Head & Neck—Integrated Science and Practice

MSMI22 Molecular Imaging Symposium

SSC Scientific Paper Sessions

SPCP21 Germany Presents

10:30 AM–12:15 PM

MSMC22 Cardiac CT Mentored Case Review

12:15–1:15 PM

Poster Discussions

1:30–2:45 PM

PS20 New Horizons Lecture

SPPH21 AAPM/RSNA Basic Physics Lecture for the Radiologic Technologist

1:30–3:00 PM

MSAS23 Associated Sciences Refresher Course

MSCT21 Case-based Review of Thoracic

MSMI23 Molecular Imaging Symposium

MSMC23 Cardiac CT Mentored Case Review

1:30–5:45 PM

SPPH22 Physics Symposium

1:30–6:00 PM

VSI021 Interventional Oncology Series

2:30–4:00 PM

Informatic Courses

3:00–4:00 PM

SSE Scientific Paper Sessions

3:00–4:15 PM

MSR023 BOOST: GYN—Case-based Review

MSR026 BOOST: Head & Neck—Case-based Review

3:00–5:00 PM

MSAS24 Associated Sciences Refresher Course

MSMI24 Molecular Imaging Symposium

MSCT22 Case-based Review of Thoracic

3:00–5:30 PM

SPEP21 Estate Planning Today for a Better Tomorrow

3:30–5:30 PM

MSMC24 Cardiac CT Mentored Case Review

4:30–6:00 PM

SPDL21 RSNA Diagnosis Live™: (Chest and Abdomen)

SPSI Special Interest Sessions

Informatic Courses

4:45–6:00 PM

MSR029 BOOST: Head & Neck Hands-On Contouring

2015 RSNA AT A GLANCE

Tuesday, December 1, 2015

7:15–8:15 AM

SPSC-SPSH Hot Topics/Controversies Sessions

SPDL30 RSNA Diagnosis Live™

8:30–10:00 AM

MSAS31 Associated Sciences Refresher Course

MSCC31 Case-based Review of Nuclear Medicine

MSES31 Essentials of Radiology Course

MSQI31 Quality Improvement Symposium

MSR031 BOOST: Breast—Oncology/Anatomy

MSR034 BOOST: CNS—Oncology/Anatomy

RC300s Educational Courses

8:30 AM–12:00 PM

RC315 Breast Series

RC303 Cardiac Series

RC308 Emergency Series

RC314 Interventional Radiology Series

RC304 Musculoskeletal Radiology Series

RC305 Neuroradiology Medicine Series

RC315 Pediatric Radiology Series

RC312 Vascular Series

10:30 AM–12:00 PM

Informatic Courses

MSRP31 Resident and Fellow Symposium

SPCP31 Mexico Presents

MSAS32 Associated Sciences Refresher Course

MSCC32 Case-based Review of Nuclear Medicine

MSES32 Essentials of Radiology Course

MSQI32 Quality Improvement Symposium

MSR032 BOOST: Breast—Integrated Science and Practice

MSR035 BOOST: CNS—Integrated Science and Practice

SSG Scientific Paper Sessions

12:15–1:15 PM

Poster Discussions

12:30–2:00 PM

Informatic Courses

1:30–2:45 PM

PS30 Annual Oration in Diagnostic Radiology

Gold Medal Presentations

1:30–3:00 PM

MSRP32 Resident and Fellow Symposium

MSAS33 Associated Sciences Refresher Course

MSCC33 Case-based Review of Nuclear Medicine

MSES33 Essentials of Radiology Course

MSQI33 Quality Improvement Symposium

1:30–6:00 PM

VSI031 Interventional Oncology Series

2:30–4:00 PM

Informatic Courses

3:00–4:00 PM

SSJ Scientific Paper Sessions

3:00–4:15 PM

MSR033 BOOST: Breast—Case-based Review

MSR036 BOOST: Head & Neck—Case-based Review

3:00–6:00 PM

RC413 Pediatric Radiology Series

3:30–5:00 PM

MSAS34 Associated Sciences Refresher Course

MSCC34 Case-based Review of Nuclear Medicine

MSES34 Essentials of Radiology Course

RC400s Educational Courses

4:45–6:00 PM

MSR039 BOOST: CNS Hands-On Contouring

Wednesday, December 2, 2015

7:15–8:15 AM

SPSC-SPSH Hot Topics/Controversies Sessions

8:00–9:00 AM

MSRT41 ASRT@RSNA 2015

8:30–10:00 AM

MSR041 BOOST: GU—Oncology/Anatomy

MSCD41 Case-based Review of Pediatrics

MSES41 Essentials of Radiology Course

MSSR41 RSNA/ESR: Emergency Symposium

RC500s Educational Courses

8:30 AM–12:00 PM

RC514 Interventional Radiology Series

RC505 Neuroradiology Series

RC509 Gastrointestinal Series

RC504 Musculoskeletal Series

RC511 Nuclear Medicine Series

RC513 Pediatric Series

RC554 Radiology Informatics Series

RC512 Vascular Series

9:20–10:20 AM

MSRT42 ASRT@RSNA 2015

10:30 AM–12:00 PM

Informatic Courses

MSR042 BOOST: GU—Integrated Science and Practice

MSCP42 Case-based Review of Pediatrics

MSSR42 RSNA/ESR: Emergency Symposium

MSES42 Essentials of Radiology Course

SSK Scientific Paper Sessions

10:40–11:40 AM

MSRT43 ASRT@RSNA 2015

12:15 AM–1:15 PM

Poster Discussions

12:30 AM–2:00 PM

Informatic Courses

1:00 PM–2:00 PM

MSRT44 ASRT@RSNA 2015

1:30–2:45 PM

PS40 Annual Oration in Radiation Oncology

1:30–3:00 PM

MSCU41 Case-based Review of US

MSES43 Essentials of Radiology Course

MSSR43 RSNA/ESR: Emergency Symposium

1:30–4:50 PM

SPHA41 Hospital Administrators Symposium

1:30–6:00 PM

VSIO41 Interventional Oncology Series

2:20–3:20 PM

MSRT45 ASRT@RSNA 2015

2:30–4:00 PM

Informatic Courses

3:00–4:00 PM

SSM Scientific Paper Sessions

3:00–4:15 PM

MSR043 BOOST: GU—Case-based Review

3:30–5:00 PM

MSCU42 Case-based Review of US

MSES44 Essentials of Radiology Course

MSSR44 RSNA/ESR: Emergency Symposium

3:40–4:40 PM

MSRT46 ASRT@RSNA 2015

4:30–6:00 PM

Informatic Courses

SPSC Controversy Sessions

SPDL RSNA Diagnosis Live™

2015 RSNA AT A GLANCE

Thursday, December 3, 2015

7:15–8:15 AM

SPSC-SPSH Hot Topic/Controversies Sessions

8:00–9:00 AM

MSRT51 ASRT@RSNA 2015

8:30–10:00 AM

MSCN51 Case-based Review of Neuroradiology

MSCS51 Case-based Review of Musculoskeletal

MSES51 Essentials of Radiology Course

RC600s Educational Courses

8:30–12:00 PM

RC608 Emergency Radiology Series

RC614 Interventional Radiology Series

RC651 Pediatric Series

9:15–10:15 AM

MSRT52 ASRT@RSNA 2015

10:00–10:20 AM

Business Session

10:30–11:30 AM

MSRT53 ASRT@RSNA 2015

10:30 AM–12:00 PM

MSCN52 Case-based Review of Neuroradiology

MSCS52 Case-based Review of Musculoskeletal

MSES52 Essentials of Radiology Course

SSQ Scientific Paper Sessions

11:45 AM–12:45 PM

MSRT54 ASRT@RSNA 2015

12:15–1:15 PM

Poster Discussions

12:30–2:00 PM

Informatic Courses

1:30–2:45 PM

SPRG51 RadioGraphics Publication Information for Potential Authors

1:30–2:45 PM

PS50B RSNA/AAPM Symposium
Informatic Courses

1:30–3:00 PM

MSCA51 Case-based Review of the Abdomen

MSCB51 Case-based Review of Breast

1:30–6:00 PM

VSI051 Interventional Oncology Series

3:00–4:00 PM

SPDL51 RSNA Diagnosis Live™: (Peds/IR/Potpourri)

SPSH Hot Topic Sessions

3:30–5:00 PM

MSCA52 Case-based Review of the Abdomen

MSCB52 Case-based Review of Breast

4:30–6:00 PM

RC700s Educational Courses

Friday, December 4, 2015

8:30–10:00 AM

RC800s Educational Courses

8:30 AM–12:00 PM

RC614 Interventional Radiology Series

RC804 Musculoskeletal Series

SPNM61 Nuclear Medicine Targeted Therapy

10:30 AM–12:00 PM

Informatic Courses

SST Scientific Paper Sessions

12:30–3:00 PM

SPFR61 Friday Imaging Symposium

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INSPIRE | INNOVATE | INVEST

The Campaign
for Funding Radiology's Future®

During RSNA 2014, the R&E Foundation launched Inspire-Innovate-Invest: The Campaign for Funding Radiology's Future® with a goal to raise \$17.5 million. We are proud to report the Campaign is more than halfway to that goal.

The demand for funding continues to grow, however, and the Foundation needs YOUR contribution to reach the goal. Every year, the Foundation receives more grant applications than the year before. Without your help, many inspired research projects and innovative teaching tools will simply go unfunded.

Look for the  icon throughout the program book, which highlights refresher courses, scientific sessions, and posters presented by Foundation grant recipients. Through the knowledge and experience of those teachers and investigators, the impact of an R&E grant is clear.

Visit the R&E Foundation Booth (Lakeside Center, Level 3) to learn more about the 2015 grant recipients, their projects, and available grant opportunities. Stop by the Virtual Auction display to bid on exciting Experience Packages—with proceeds benefiting the Foundation. Reflect on the many donors who have paved the way, and consider making your own investment in the future of radiology.

\$17.5
Million



WAYS TO GIVE

- Bid on an item in the Virtual Auction
- Stop by the booth and make a donation of \$300 or more to enjoy the benefits of the Donor Lounge
- Become a Presidents Circle donor with a gift of \$1,500 or more
- Learn more about becoming a Centennial Pathfinder at RSNA.org/Campaign



William G. Bradley Jr, MD, PhD
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THANK YOU FOR SUPPORTING THE R&E FOUNDATION AND THE FUTURE OF RADIOLOGY.

GENERAL INFORMATION

The RSNA® Scientific Assembly and Annual Meeting is the official meeting of the Radiological Society of North America. RSNA is a registered trademark of the Radiological Society of North America.

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Accreditation and Designation Statements

The Radiological Society of North America (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 93.75 *AMA PRA Category 1 Credits™*. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

The Commission on Accreditation of Medical Physics Education Programs (CAMPEP) has approved the direct transfer of *AMA PRA Category 1 Credit™* to Medical Physics Continuing Education Credit (MPCEC) on a credit-for-credit basis for medical physicists.

RSNA is an ARRT®-approved Recognized Continuing Education Evaluation Mechanism Plus (RCEEM+) and will provide Category A/A+ continuing education credits for radiologic technologists and radiologist assistants.

Content Codes

To help participants better organize their CME records, two-letter content codes have been indicated throughout the program. The key to the codes follows:

BQ Biomarkers/Quantitative Imaging	MK Musculoskeletal Radiology
BR Breast (Imaging and Interventional)	MR Magnetic Resonance Imaging
CA Cardiac Radiology	NM Nuclear Medicine
CH Chest Radiology	NR Neuroradiology
CT Computed Tomography	OB Obstetric/Gynecologic Radiology
DM Digital Mammography	OI Oncologic Imaging
ED Education	OT Other
ER Emergency Radiology	PD Pediatric Radiology
GI Gastrointestinal Radiology	PH Physics and Basic Science
GU Genitourinary Radiology	PR Professionalism
HN Head and Neck	RO Radiation Oncology
HP Health Policy	RS Research and Statistical Methods
IN Informatics	SQ Safety and Quality
IR Interventional	US Ultrasound
LM Leadership & Management	VA Vascular
MI Molecular Imaging	

Learning Objectives

At the conclusion of this live activity, participants will be able to:

1. Access the results of new research, and assess their potential applications to clinical practice.
2. Improve basic knowledge and skills relevant to clinical practice.
3. Practice new techniques.
4. Assess the potential of technological innovations and advances to enhance clinical practice and problem solving.
5. Apply principles of critical thinking to ideas from experts and peers in the radiologic sciences.

Continuing Education

CE Credit

In order to record and obtain Category A/A+ continuing education (CE) credits, all ARRT registered technologists and radiologist assistants must follow ARRT guidelines. Failure to do so will result in no credits being awarded.

- Attendance will be verified with a check-in and check-out process for all courses and events; therefore, all registrants looking to obtain Category A/A+ credit must be present for the duration of the course or event.
- *ARRT Attendance Documentation Cards* will be available at the door for all courses and events that are approved for Category A/A+ credit.
- Attendee must obtain an *ARRT Attendance Documentation Card* at the *beginning* of the session, complete the card, and return it to the room attendant at the *end* of the session.
- Additionally, attendees must evaluate the session using RSNA's Credit Eval Claim Center.
- An attendee arriving late or departing early will not obtain credit.
- Any attendee who forgoes submitting the *ARRT Attendance Documentation Card* at the close of the session will not obtain credit.

CME Credit

Science and Plenary Sessions and Education Courses

All sessions/courses have been approved for *AMA PRA Category 1 Credit™*. To register attendance, claim credit, and evaluate the sessions, visit the RSNA's Credit Eval Claim Center.

Science Posters, Education Exhibits and Quality Storyboards

AMA PRA Category 1 Credit™ is available for digital poster presentations, quality storyboards, and selected education exhibits on Sunday, 12:30–1:30 PM, and Monday–Thursday, 12:15–1:15 PM. At the conclusion of discussions with the presenters, document your attendance by using the RSNA's Credit Eval Claim Center.

GENERAL INFORMATION

Emergency Information/First Aid

For fire, medical, or police assistance, dial 6060 from any house phone in the McCormick Place Convention Center or 1-312-791-6060.

Fully equipped first aid stations, staffed by licensed medical professionals, are located in the Grand Concourse, Level 2.5, west of the Business Center, and in the Lakeside Center, Level 1, near the bank of telephones.

Facilities for nursing mothers are available at Camp RSNA.

Education exhibits at RSNA 2015 will include the popular Cases of the Day feature. Each day, from Sunday through Thursday, a new case in each of 15 categories will be posted. Attendees will be able to submit a diagnosis for each case on the computer presentation system, at nearby Internet Zone computers, or via any Web browser. For each correct diagnosis submitted online, participants will earn .50 *AMA PRA Category 1 Credit*[™].

CME Disclosure

The ACCME requires that RSNA, as an accredited provider of continuing medical education, obtain signed disclosure statements from annual meeting faculty, including committee members, program planners, presenters, and authors. The intent of this policy is not to prevent an individual with a financial relationship from participating; however, in accordance with ACCME standards, RSNA has developed policies and procedures to manage identified conflicts of interest.

The ACCME further requires that RSNA provide disclosure information to all attendees prior to the educational activity. Individuals who have or have had an affiliation or financial relationship with any commercial interest (within the previous 12 months or at the time the research was conducted) are noted with a star (★) after their names in the program book. Financial disclosure statements for these individuals are reported after each individual's name in the disclosure index at the back of the program book (p 373). All other individuals have indicated they have nothing to disclose.



This icon indicates discussion of uses not approved by the FDA. RSNA recognizes that at educational meetings, faculty may discuss the application of some devices, materials, or pharmaceuticals that are not FDA approved. In keeping with the highest standards of professional integrity and ethics, RSNA requires that faculty fully disclose to their audiences that there will be discussion of the unlabeled use of a commercial product, device, or pharmaceutical that has not been approved for such purpose by the FDA.

Authors of scientific abstracts at RSNA 2015 have guaranteed that human research was conducted following institutional review board (IRB) approval, under a waiver from the IRB, or in accordance with the World Medical Association Declaration of Helsinki, and that animal research was conducted following approval by the institutional animal care and use committee or in accordance with the National Institutes of Health Public Health Service Policy on Humane Care and Use of Laboratory Animals.

QR Codes



Look for the QR codes accompanying plenary and science sessions and education courses listed in this program. Use your smartphone to scan the code and automatically download abstract information for the session or course. Information can also be downloaded by using the codes on signs outside meeting rooms at the McCormick Place Convention Center.

References to Abstracts in the Online 2015 RSNA Meeting Program

To cite an abstract from the 2015 online meeting program, go to RSNA2015.RSNA.org to access the complete online program. Search for and access the text of the specific abstract you wish to cite, and then click on the box labeled "Cite this Abstract" to access the specific abstract citation information for that particular online abstract.

The general format for citing an online RSNA 2015 abstract is as follows:

Author XX, Author XX, Author XX, et al. Title of the Specific Abstract. Presented at: Radiological Society of North America 2015 Scientific Assembly and Annual Meeting, November 29–December 4, 2015, Chicago, IL. [rsna2015.rsna.org/program/details/?emID= ...](http://rsna2015.rsna.org/program/details/?emID=...) Accessed Month day, 2015.

To obtain permission to reprint abstracts from the *RSNA Meeting Program*, go to <http://www2.rsna.org/rsnarights>. For additional information, contact permissions@RSNA.org, or send a fax to 1-630-590-7724. Direct inquiries by mail to Permissions, RSNA, 820 Jorie Blvd, Oak Brook, IL 60523. Requests should include the title, first author, year of meeting presentation, and intended use of the material.

RSNA 2015 Virtual Meeting

The meeting is not only at McCormick Place. The RSNA 2015 Virtual Meeting allows users to experience the world's premier medical imaging event from anywhere in the world via the Internet with a computer or mobile device. Participants can access nearly 66 live streaming courses, digital posters and cases of the day. Many offerings are available for CME credit during the live sessions, and content will be available "on demand" through Monday (December 21). No CME credits are awarded for viewing on-demand sessions. Visit RSNA2015.RSNA.org to register.

Subspecialty Content

Customizing your RSNA 2015 itinerary is easy through the enhanced sorting capability of the online *RSNA Meeting Program*. Go to RSNA2015.RSNA.org and click on Meeting Program to search for scientific presentations and other events by radiologic subspecialty. Choose a subspecialty of interest to you, view all of the meeting content in that subspecialty, and download and print it to facilitate your daily meeting plan. Printed brochures will also be available onsite at the convention center.

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2015 RSNA

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GOLD MEDALISTS

Hedvig Hricak, MD, PhD, Dr hc

Hedvig Hricak, MD, PhD, Dr hc, is internationally renowned for her extensive research and clinical expertise in genitourinary and gynecologic oncologic imaging. Her pioneering work in MRI and MR spectroscopic imaging of prostate cancer and MRI and CT of gynecological cancers helped lay the groundwork for genitourinary and gynecologic oncologic imaging as we know them today. Dr Hricak was the President of RSNA in 2010.

“The importance of Dr Hricak’s role in imaging—particularly in gynecological and prostate cancers—can’t be overstated,” said RSNA President Ronald L. Arenson, MD. “Along with her remarkable early work, she continues to break ground developing clinical approaches for functional and molecular imaging of cancer—advancements that represent not only the future of patient care, but the field of radiology. As a leader, Dr Hricak is forging an extraordinary legacy in our specialty.”

“I am tremendously honored to receive the RSNA gold medal,” Dr Hricak said. “It was both a privilege and a pleasure to serve the Society and our profession. Not only did I enjoy the wonderful team spirit and camaraderie, I also learned a great deal. I am deeply grateful to all my fellow Board members and committee members as well as the excellent, dedicated RSNA staff with whom I collaborated over the years.”

Dr Hricak, a native of Zagreb, Croatia, earned a medical degree from the University of Zagreb, in 1970. She came to the U.S. two years later, completing her radiology residency at St. Joseph Mercy Hospital in Pontiac, Mich., in 1977, followed by a fellowship at Henry Ford Hospital in Detroit, where she served as a senior staff member.

She has spent the remainder of her career on both coasts, serving from 1982 to 1999 as professor of radiology, radiation oncology and gynecology and, eventually, as head of abdominal imaging in the Department of Radiology at the University of California, San Francisco. In 1999, she assumed her current position as chair of the Department of Radiology, Carroll and Milton Petrie Chair, Memorial Sloan-Kettering Cancer Center, New York, where her leadership has

expanded the size of the department and the scope of its research.

She also holds a senior position within the Molecular Pharmacology and Chemistry Program at the Sloan-Kettering Institute and is a professor at the Gerstner Sloan Kettering Graduate School of Biomedical Sciences, as well a professor of radiology at the Weill Medical College of Cornell University.

Dr Hricak received her PhD (Dr Med Sc) from the Karolinska Institute in Stockholm, Sweden, in 1992, and in 2005 became the first woman to receive an honorary doctorate in medicine (Dr hc) from the Ludwig Maximilian University of Munich in its 500-year history.

A major proponent of personalized medicine, Dr Hricak opened RSNA 2010 with her address, “Oncologic Imaging: A Guiding Hand of Personalized Cancer Care,” stressing that the essence of personalized medicine lies in the use of biomarkers, including imaging biomarkers, which must be validated, quantitative and reproducible. Also at RSNA 2010, Dr Hricak moderated a lively Q&A session with former President Bill Clinton, focusing mainly on global healthcare concerns.

In other service to RSNA, Dr Hricak was appointed to the RSNA Board of Directors in 2002 as liaison for publications and communications. Prior to her Board appointment, Dr Hricak served as chair of RSNA’s Public Information Advisory Board and as a member of other RSNA public information committees. As Chair of the RSNA Board of Directors, Dr Hricak was a driving force behind major rebranding efforts and was a tireless advocate for international outreach.

Dr Hricak has authored or co-authored 18 books, more than 450 research articles, reviews and editorial articles, and more than 130 book chapters. She is an associate editor and editorial board member of numerous premier medical journals, serving as an associate editor of *Radiology* from 1985 to 1993 and a consultant to the editor of *Radiology* from 1993 to 1997.

Dr Hricak is a member of the National Academy of Medicine (formerly the Institute of Medicine) and has served on the Scientific Advisory Board of the National Cancer Institute and the Advisory Council of the National Institute of Biomedical Imaging and Bioengineering. Throughout her career, Dr Hricak has worked to promote international collaboration, particularly with respect



to education and research, and has mentored a long list of trainees from around the world. She also helped to create international training programs to improve imaging practice and research, particularly in developing countries.

In recognition of her international outreach efforts, research and visionary leadership, Dr Hricak has received many awards, including the Marie Skłodowska-Curie Award from the American Association for Women Radiologists, the Beclere Medal of the International Society of Radiology, the Howard M. Pollack Medal of the Society of Abdominal Radiology, the Katarina Zrinska Croatian Presidential Award and the gold medals of the International Society for Magnetic Resonance in Medicine (ISMRM), the Association of University Radiologists, the Asian Oceanian Society of Radiology and the European Society of Radiology.

Dr Hricak was awarded fellowship by the American College of Radiology, the ISMRM, the Society of Uroradiology, the International Cancer Imaging Society and the American Association for the Advancement of Science. She is a member of the Russian Academy of Science and the Croatian Academy of Sciences and Arts, and is an honorary member or fellow of 15 national radiological societies from around the globe.

For her groundbreaking contributions to functional and molecular imaging, her efforts to promote education throughout the world, and her visionary leadership, RSNA is proud to award its Gold Medal to Hedvig Hricak, MD, PhD, Dr hc.

Robert A. Novelline, MD

One of the most highly respected educators in radiology today, Robert A. Novelline, MD, has become virtually synonymous with the words 'emergency radiology.'

Along with establishing one of the nation's first emergency radiology residency/fellowship programs in the early 1980s, Dr Novelline, a professor of radiology at Massachusetts General Hospital and Harvard Medical School, Boston, has trained hundreds of students and junior staff members and is a founding member of the American Society of Emergency Radiology (ASER).

"A pioneering researcher, educator and author, Dr Novelline has expertly shaped and guided the growth of emergency radiology for more than three decades," said RSNA President Ronald L. Arenson, MD. "His dedication to educating and mentoring radiology students will long be felt at medical schools that still rely on his landmark textbook to teach the fundamentals of radiology, and by patients who reap the benefits of his expertise every day. We are fortunate Dr Novelline chose to devote his intellect, talent and vision to our specialty."

"I am deeply honored to receive the RSNA Gold Medal and am thrilled to be included among the illustrious group of prior recipients," Dr Novelline said. "I would like to particularly acknowledge the support of the many individuals who contributed to the success of my academic career, including my family, friends, colleagues and mentors. I am most appreciative of their encouragement, friendship and generosity. Special gratitude is due to the members of the RSNA Board of Directors and RSNA staff for their continued support and assistance, as well as their recognition of my two special interests, emergency radiology and radiology education."

Born in Boston, Dr Novelline received his medical degree from Boston University School of Medicine and completed his radiology residency and fellowships in both vascular/interventional radiology and radiology education at Massachusetts General Hospital. Much of Dr Novelline's early research and many of his publications dealt with therapeutic intravascular infusion therapy, therapeutic embolization and angioplasty.



Dr Novelline's dedication to radiology education began early in his career. He served as director of both the Harvard Medical School Core Clerkship and the Advanced Radiology Clerkship at Massachusetts General Hospital between 1975 and 2012, when he developed medical student curricula adopted by many medical schools, trained hundreds of residents, fellows and junior staff, and served as a mentor to countless students.

In 1977, Dr Novelline was named assistant professor of radiology at Massachusetts General Hospital and Harvard Medical School, moving up the ranks to his current position as professor in 1996. Along the way, Dr Novelline began building a reputation for his innovative teaching methods and captivating lecturing style.

In 1982, he was appointed director of the newly formed Division of Emergency Radiology at Massachusetts General Hospital—a position he held until 2012. Dr Novelline shaped the course of emergency radiology on a number of fronts. He installed one of the first CT scanners in an emergency imaging division, pioneered research on CT diagnosis of trauma and acute non-traumatic emergencies, and reported on new CT techniques for diagnosing appendicitis, diverticulitis and urinary tract stones.

Among the founding members of ASER in 1987, Dr Novelline led the effort to revise, expand and disseminate the National Curriculum in Emergency Radiology, a major focus of ASER. In 1998, he founded the Alliance for Medical Student Educators in Radiology (AMSER), the only national organization for academic radiologists

with a particular interest in medical student education. Dr Novelline has served the Association of University Radiologists (AUR) in many capacities, including as president in 2012.

Further cementing his reputation in radiology education, Dr Novelline served initially as co-author and later as author of the landmark 1988 book, "Squire's Fundamentals of Radiology," used by medical schools throughout the U.S. and abroad. Now in its seventh edition, the landmark publication is available in English, German, Spanish, Portuguese, Chinese, Japanese and Korean. Another textbook co-authored in 1993 by Dr Novelline, "Radiology of Emergency Medicine," still serves as the definitive reference textbook on emergency radiology.

As well as authoring numerous textbooks, Dr Novelline has published over 150 original reports or reviews and has served on the editorial boards of journals including *Radiology*, *Emergency Radiology* and *Investigative Radiology*, and as a manuscript reviewer for *Academic Radiology*, *American Journal of Radiology* and *The New England Journal of Medicine*.

He is a sought-after speaker who has lectured nationally and internationally on emergency radiology and radiology education, and has held more than 50 visiting professorships around the world.

Among his extensive RSNA history, Dr Novelline served as the first RSNA co-chair of the RSNA-American College of Radiology Public Information Website Committee, and oversaw the successful launch of *RadiologyInfo.org*, the first-of-its-kind patient information portal. Dr Novelline also served on the RSNA Refresher Course Committee from 1997 to 2006, serving as chairman from 2003 to 2006, and as director of the Emergency Radiology Track from 1997 to 2002. He has also served on the RSNA Public Information Advisors Network since 2005. In 2007, Dr Novelline was named the RSNA Outstanding Educator.

Other accolades include the 2004 Association of Program Directors in Radiology's Achievement Award, the 2012 AMSER Excellence in Education Award and the 2013 Sustained Excellence in Teaching Award from Harvard Medical School. Dr Novelline received the ASER gold medal in 2000 and the AUR gold medal in 2015.

In recognition of his considerable contributions and dedication to education and clinical research and his visionary role in developing the growth of emergency radiology, RSNA is proud to award its Gold Medal to Robert A. Novelline, MD.

GOLD MEDALISTS

Steven E. Seltzer, MD

A renowned clinician and researcher, Steven E. Seltzer, MD, has forged a legacy as a passionate educator committed to teaching and mentoring radiology students and junior faculty to fill the leadership roles so critical to the specialty's future.

"From the beginning of his career, Dr Seltzer has understood the true importance of radiology research and the need to provide opportunities for young investigators to take their ideas from concept to fruition," said RSNA President Ronald L. Arenson, MD. "Radiology owes a great debt to Dr Seltzer for shepherding the academic and research careers of trainees who make up the next generation of radiologists. His vision and leadership in organized radiology has helped shape our specialty. The multidisciplinary translational research center he co-founded will continue to offer research opportunities for years to come."

"I am incredibly humbled and proud to have been selected to receive one of the RSNA's 2015 Gold Medals," Dr Seltzer said. "Even though my name may be on the award, it reflects the accomplishments of an entire team of colleagues at Brigham and Women's Hospital and friends from across the country. It has been a pleasure and an honor to work with such talented people. I am also enormously thankful to my wonderful family who have given me the love, support and understanding needed to be successful in a long professional career."

Born in Philadelphia, Dr Seltzer received his baccalaureate and medical degrees from the University of Pennsylvania and completed his radiology residency at the Peter Bent Brigham Hospital in 1980. He joined the Brigham and Women's Hospital (BWH)/Harvard Medical School staff directly afterward, and

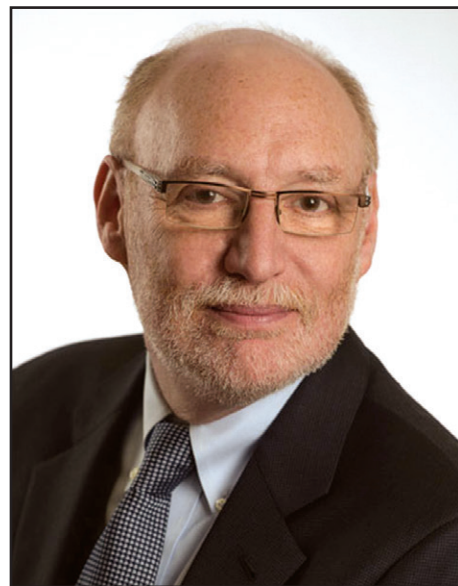
remained on staff for his entire career. Since 1997, Dr Seltzer has held his current position as Chairman of the Department of Radiology at Brigham and Women's Hospital and the Philip H. Cook Professor of Radiology at Harvard Medical School.

From 1984 to 1997, Dr Seltzer served as co-director of abdominal imaging and director of CT at Brigham and Women's Hospital, a role that allowed him to educate, mentor and facilitate the development of dozens of residents and fellows—many of whom went on to long-term careers as academic radiologists or funded researchers.

As department chair, Dr Seltzer is committed to developing new knowledge, new technologies and new approaches to patient care. Overseeing faculty development, Dr Seltzer has steered junior staff members into career development programs such as the Association of University Radiologists (AUR) GE Radiology Research Academic Fellowship Award, which fosters original clinical and health services research. Under Dr Seltzer's direction, the Brigham and Women's Radiology Department has been fertile ground for the development of numerous chairs of academic radiology departments.

Also as department chair, Dr Seltzer worked with founding director Ramin Khorasani, MD, MPH, to establish the Center for Evidence-Based Imaging at Brigham and Women's Hospital in 2002. The unique multidisciplinary translational research center offers diversified funding sources including research grants from the National Institutes of Health and the Centers for Medicare & Medicaid Services, among other institutions.

Dr Seltzer, who served on the RSNA Health Policy and Practice Committee from 2000 to 2002, is active in numerous radiology organizations and served as president of the AUR, the Academy of Radiology Research (ARR) and the Society of Chairs of Academic Radiology Departments. Dr Seltzer was elected to fellowship in the American College of Radiology in 1997. He was awarded the AUR gold medal in 2004.



Dr Seltzer currently serves as chair of the Coalition for Imaging and Bioengineering Research created by the ARR. The goal of the coalition is to bring together representatives of academic radiology departments, industry and patient advocacy groups to champion the causes of increasing resources and opportunities for imaging research and promoting the translation of that research to increase human health.

His other honors include the 1981 Teacher of the Year Award from the Brigham and Women's Hospital Department of Radiology and numerous Editor's Recognition Awards from *Radiology*.

Dr Seltzer has published over 130 peer-reviewed research manuscripts in journals including *Radiology*, *Academic Radiology* and the *American Journal of Roentgenology*.

Dr Seltzer and Rochelle, his wife of 43 years, are the parents of Daniel (wife, Elyse) and Gabriel, and the grandparents of Samuel Seltzer.

For his dedication and commitment as a radiology educator, mentor, clinician and author and his visionary leadership in promoting translational research, RSNA is proud to award Steven E. Seltzer, MD, its Gold Medal.

HONORARY MEMBERS

Lorenzo Bonomo, MD

Lorenzo Bonomo, MD, has been a respected educator and leader among international radiologists during his decorated career in chest imaging.

Dr Bonomo's scientific research fields include imaging of pulmonary circulation, lung cancer staging, and non-invasive cardiovascular imaging. His research into these areas, among others, is reflected in more than 350 scientific publications, which include four books and numerous book chapters.

"Along with his significant contributions in chest imaging research, Dr Bonomo has served as an international ambassador for radiology, continually working to keep radiology in the spotlight across the globe," said RSNA President Ronald L. Arenson, MD. "He devoted his leadership roles in European radiology organizations to strengthening relationships with other scientific societies and promoting the visibility of radiology."

"It is a great honor and privilege to receive RSNA Honorary Membership, and I am very proud and grateful for it," Dr Bonomo said. "I've attended the RSNA Annual Meetings for more than 30 years and I consider this prestigious award not only a personal recognition, but an acknowledgment of Italian radiology as a whole, which has always been given an invaluable opportunity to grow both scientifically and professionally through RSNA."

Currently a professor of radiology and chairman of the Department of Radiological Sciences at the Catholic University of Rome, Gemelli Hospital, Dr Bonomo is also director of the university's training programme in radiology.



Dr Bonomo earned his medical degree at the Catholic University in Rome in 1970. After completing his residency training program in Rome he moved to Chieti University, Italy, where he spent more than 25 years and helped establish the radiology department. After starting as associate professor and interim chairman in the Department of Radiology, he became a full professor and department chairman from 1990 until taking his posts at Catholic University and Gemelli Hospital in 2003.

From 1998 to 2003, Dr Bonomo served as the founder and director of a government breast screening program in Italy's Abruzzo region. From 1996 to 2003 he served as director of the Medical Programme of the University of Chieti.

Parallel to his professional activities, Dr Bonomo served as president of several radiologic organizations including the Italian Society of Thoracic Radiology from 1992 to 1996; the European Society of Thoracic Imaging (ESTI)

from 1999 to 2000; and the First World Congress of Thoracic Imaging and Diagnosis in Chest Disease in 2005. He also received honorary membership from ESTI in 2006.

His dedication to radiology has brought him numerous awards, including honorary membership of the Argentinean, French, German, Greek, Italian, Romanian, Serbian and Spanish radiological societies. He was awarded a gold medal from the European Society of Emergency Radiology in 2013.

Over the past decade, Dr Bonomo has held several prestigious positions within national and international radiological societies. He served as president of the Italian Radiological Society (SIRM) from 2002 to 2004, during which time he was also a member of the Education Committee of the European Association of Radiology (EAR).

He went on to serve as treasurer of the EAR from 2004 to 2006 before the organization became a part of the newly founded European Society of Radiology (ESR), where he is now the immediate past-president.

Dr Bonomo oversaw the organization of the ESR's annual meeting, the European Congress of Radiology (ECR), as the ECR 2012 Congress President.

In recognition of his contributions to chest imaging and his dedication to promoting radiology around the world, RSNA is pleased to present Lorenzo Bonomo, MD, with honorary membership.

HONORARY MEMBERS

Chamaree Chuapetcharasopon, MD

A pioneer and leader in international radiology, in 2001 **Chamaree Chuapetcharasopon, MD**, successfully implemented the first totally digital radiology department in her native Thailand at Bumrungrad International Hospital, a 500-bed private hospital which is still the leading center in the region.

“Dr Chuapetcharasopon is a natural leader who has promoted the advancement of medical administration in her native Thailand throughout her career,” said RSNA President Ronald L. Arenson, MD. “Along with being an innovative interventional radiologist and renowned informatics expert, she is equally devoted to building international collaboration among radiologists around the world.”

“This recognition has simply overwhelmed me,” Dr Chuapetcharasopon said. “For more than 25 years as an international member, I have enjoyed attending the annual meetings, making new friends, meeting old friends, and most importantly, learning something new every year. It is with deep gratitude that I accept this honor.”

Dr Chuapetcharasopon received her medical degree with high honors from Ramathibodi Hospital, faculty of medicine, Mahidol University, in Bangkok, Thailand, in 1979. After six years in community hospitals far from Bangkok, she decided to return to the city to complete her residency training in general radiology at the same institute where her father, Professor Thavi Boonchoti, also a radiologist, served as dean of the medical school at that time. Inspired by Dr Chusilp Charnsangavej, a visiting professor from the University of Texas MD Anderson Cancer Center, Dr Chuapetcharasopon pursued her fellowship in vascular and interventional radiology and body imaging at MD Anderson, working under Dr Charnsangavej and Dr Sidney Wallace from 1988 to 1990.

Dr Chuapetcharasopon became interested in

digital imaging after taking courses at RSNA annual meetings, which she first began attending in 1988. After 10 years as an interventionist in medical school and private practice, Bumrungrad International Hospital recruited her to be the chief of the Department of Radiology.

In 2002, Dr Chuapetcharasopon joined Bumrungrad International’s administrative team as the associate medical director, rising to the position of medical director where she oversaw 1,000 medical staff members from 2008 to 2012. Under her term as medical director, Bumrungrad International received its fourth Joint Commission International (JCI) accreditation in 2011 and broke records by achieving the highest score in the hospital’s history and in the history of JCI accreditation in Asia.

Dr Chuapetcharasopon firmly believes that medical administration must not come at the sacrifice of medical knowledge. Therefore, she continues to teach and support many young radiologists in their research. Ten years ago, she was elected to the executive committee of the Royal College of Radiologists of Thailand (RCRT) and continues to serve on that committee. She also sits on the Thai Radiology Board Examination Committee and the Thai Interventional Radiology Sub-board Committee, and is involved in many international radiology events.

In 2012, she served as co-chair of the organizing committee of the Sixth Congress of the Asian Society of Cardiovascular Imaging (ASCI) in Bangkok, and in 2014, she was appointed as an ASCI executive committee member. She is the current president of the Radiological Society of Thailand and secretary-treasurer of the Association of Southeast Asian Nations (ASEAN) Association of Radiology.

Dr Chuapetcharasopon is also recognized for her medical informatics knowledge and has given numerous lectures domestically and internationally. She is currently a member of the Thai Medical Informatics Association Executive Committee and has volunteered for 20 years with the Thai Medical Women’s Association. She was elected as the Central Asia regional



vice president of the Medical Women’s International Association (MWIA) from 1997 to 2000 and as president of the Thai Medical Women’s Association from 2012 to 2014.

After learning about the RSNA International Visiting Professor (IVP) Program in 2003, Dr Chuapetcharasopon applied for the program on behalf of RCRT. In 2005, she traveled to the annual scientific meeting in Bangkok where IVP team members spent two weeks visiting teaching institutes. Other activities include teaching RSNA refresher courses in international education and serving as a speaker for the international luncheon for the American Association for Women Radiologists. Dr Chuapetcharasopon’s was appointed to RSNA’s Committee on International Radiology Education in December 2013.

In recognition of her impressive contributions to international radiology and medical informatics, RSNA is proud to present Chamaree Chuapetcharasopon, MD, with honorary membership.

Jung-Gi Im, MD, PhD

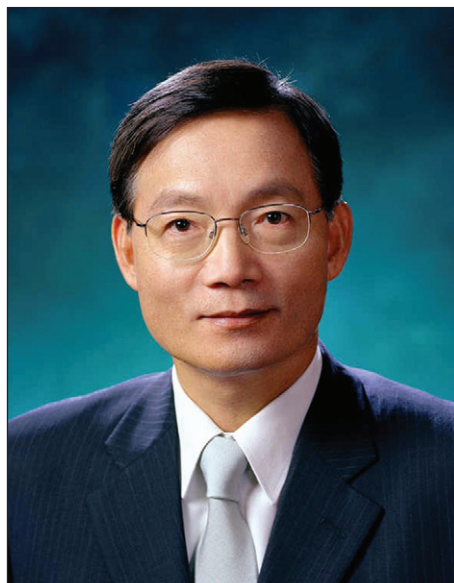
An internationally renowned expert and lecturer in thoracic radiology, **Jung-Gi Im, MD, PhD**, has made a significant impact on the direction of radiology research in his native South Korea and beyond.

Dr Im is a professor of medicine at the Department of Radiology, College of Medicine, Seoul National University, where he served as executive vice-president from 2011 until 2014. He is also a consultant physician in radiology at Sheikh Khafila Specialty Hospital in the United Arab Emirates.

“Dr Im is a prolific researcher whose remarkable work in thoracic radiology has been recognized throughout the world,” said RSNA President Ronald L. Arenson, MD. “As an accomplished author, editor, lecturer and inventor, Dr Im’s many gifts will continue to advance the field of radiology for future generations. As a leader, Dr Im has expertly guided the direction of radiology societies in his native Korea and beyond.”

“It’s my great honor and privilege to be an Honorary Member of the RSNA,” Dr Im said. “I hope that sustained and unprecedented contribution of the RSNA to research and education in radiology and allied sciences will continue to enhance the spirit of both science and humanity.”

Born in Korea, Dr Im received his medical degree in 1975 and doctorate in medicine in 1983 at Seoul National University, where he served as dean of medicine from 2008 to 2011. Dr Im completed his research fellowship in the De-



partment of Radiology at the University of California, San Francisco, in 1987.

Dr Im has served as principal investigator on numerous research projects focusing on imaging of pulmonary infections, lung cancer, diffuse interstitial lung disease, mediastinal and chest wall disease, and other issues. He has been an invited lecturer in nearly a dozen countries on three continents.

Dr Im has held a number of executive positions, including as president of the Korean Association of Medical Colleges from 2008 to 2012, and president of the Korean Council for Medical Education from 2010 to 2012. Dr Im served as director of the Board of Directors for the National Research Foundation of Korea from 2012 to 2015, and as director for the Board of Directors for the National Cancer Center from 2009 to 2015. He also served as

president of the organizing committee for the third World Congress of Thoracic Imaging, held in Seoul in 2013, and was a member of the organizing committee for the first two congresses. He is an active member of the Fleischner Society and a fellow of the Society of Computed Body Tomography and MR.

Dr Im has received multiple Awards for Scientific Exhibition from the Korean Radiological Society Annual Convention, including gold awards in 1983, 1991 and 1997, and a silver award in 1992. In 2001, he was named Alumni of the Year by the Department of Radiology, Seoul National University College of Medicine Alumni.

The founding editor of the *Korean Journal of Radiology*, Dr Im has also been an associate editor of the *Journal of Thoracic Imaging* since 1997, and is a manuscript reviewer for *Radiology* and *RadioGraphics*. From 2008 to 2011, he served as president of the Korean Association of Medical Journal Editors.

Dr Im has more than 200 published articles and has been the editor of two books on chest radiology. He also holds two patents in Korea: TFT Board Structure for High-resolution Digital Radiography and System and Methods for the Detection of Micro-calcification.

In addition to his work with the RSNA journals, Dr Im has participated in the RSNA Annual Meeting as a session moderator and received multiple RSNA Certificates of Merit for Scientific Exhibition awards.

In recognition of his considerable achievements as a researcher, author, editor, lecturer and inventor, RSNA is proud to present Jung-Gi Im, MD, PhD, with Honorary Membership.

PLENARY SESSIONS

RSNA 2015 Plenary Sessions

All lectures will be presented in the Arie Crown Theater.



SPECIAL LECTURE

SUNDAY, NOVEMBER 29
8:30 AM

Radiology, Medicine, and Healthcare: Will Inaction or Innovation Determine Our Future?

Darrell G. Kirch, MD

NEW HORIZONS LECTURE

MONDAY, NOVEMBER 30
1:30 PM

Redefining Innovation
Jeffrey R. Immelt



ANNUAL ORATION IN DIAGNOSTIC RADIOLOGY

TUESDAY, DECEMBER 1
1:30 PM

Trends and Developments Shaping the Future of Radiology

James H. Thrall, MD

ANNUAL ORATION IN RADIATION ONCOLOGY

WEDNESDAY, DECEMBER 2
1:30 PM

NRG Oncology and the National Cancer Institute's National Clinical Trials Network: A Case Study for Innovation in Multi-Disciplinary Cancer Research

Walter J. Curran Jr., MD



RSNA/AAPM SYMPOSIUM

THURSDAY, DECEMBER 3
1:30 PM

PET/MR Imaging in Practice: A Clinical Perspective
Jonathan E. McConathy, MD, PhD

PET/MR Imaging in Practice: A Research Perspective
Bruce R. Rosen, MD, PhD



OUTSTANDING RESEARCHER/ EDUCATOR AWARDS

The RSNA Outstanding Researcher Award and Outstanding Educator Award annually recognize and honor one individual in each award category who has made significant contributions to the field of radiology or radiologic sciences throughout a career of research, or teaching and education.

The RSNA Board of Directors is proud to present the 2015 Outstanding Researcher Award to **G. Scott Gazelle, MD, MPH, PhD**, and the 2015 Outstanding Educator Award to **Kay H. Vydareny, MD**.

The awards will be presented during the opening session of the RSNA Scientific Assembly and Annual Meeting, Sunday at 8:30 AM in the Arie Crown Theater, Lakeside Center, Level 2.

OUTSTANDING RESEARCHER

G. Scott Gazelle, MD, MPH, PhD
Harvard Medical School



OUTSTANDING EDUCATOR

Kay H. Vydareny, MD
American Board of Radiology
Emory University School of
Medicine

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