RSNA News™

August 2016 Volume 26, Issue 8

RSNA Joint Partnerships Strengthen Radiology Across the Globe

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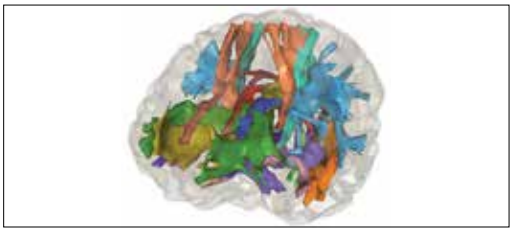


RSNA News™

UP FRONT

RADIOLOGY'S FUTURE

NEWS YOU CAN USE

RSNA MISSION

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

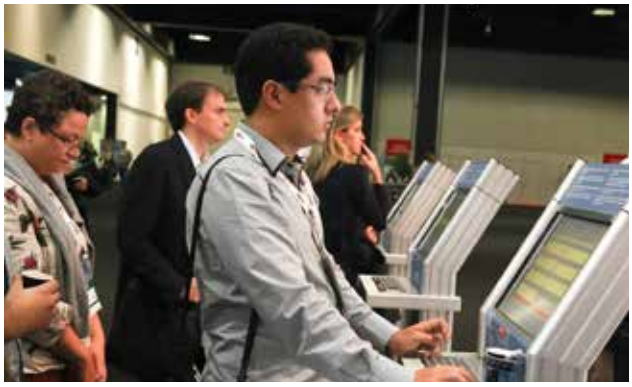
Follow us for exclusive news, annual meeting offers and more!

RSNA, SPR Partner for JPR 2016

RSNA and the Radiological and Diagnostic Imaging Society of São Paulo (SPR) partnered for the 2016 Jornada Paulista de Radiologia (JPR), the leading medical imaging meeting in Latin America, held April 28–May 1 in São Paulo, Brazil.

With the theme, "Diagnostic Imaging: Technology for Life," JPR 2016 was designed to showcase some of the best work that both organizations offer. Courses reflected a variety of subspecialty areas and RSNA participated in defining the scientific program for the event.

The two organizations also teamed up to present JPR in 2014, and will partner again in 2018.



Numerous RSNA luminaries attended JPR 2016, including 2012 RSNA President George Bisset, III, MD, (*top*) who presented courses on Pediatrics and Professionalism, Leadership and Management and served as a pediatrics coodinator; *left:* a participant in one of many Cases of the Day which challenged attendees to study a case and choose a diagnostic option. Read more about RSNA's international partnerships on Page 7.

Fifth Annual International Day of Radiology Focuses on Breast Imaging

On Nov. 8, join more than 140 radiology-related professional societies from around the globe in celebrating the advances that radiologic innovations have brought to patients worldwide. This year, the International Day of Radiology (IDoR) is dedicated to breast imaging and the essential role that radiologists play in the detection, diagnosis and management of diseases of the breast.

IDoR is sponsored by RSNA, the European Society of Radiology (ESR) and the American College of Radiology (ACR), with a dedicated website *(IDoR2016.com)* and social media activities. The sponsoring societies are joined by the Society of Breast Imaging (SBI), European Society of Breast Imaging (EUSOBI), and the Image Wisely® and EuroSafe Imaging campaigns in recognizing the significance of our specialty in breast healthcare.

Visit *RSNA.org/IDoR* for promotional materials you can customize for your practice or organization.

Numbers in the News

2.5

Number, in millions, of patients in Japan who have viral hepatitis — one of the topics to be covered in a new, one-day Liver Symposium to be held at RSNA 2016. Read more on Page 5.

700

Approximate number of exhibitors to be featured in RSNA 2016 Technical Exhibits. Details on the attractions planned for the exhibit hall at RSNA 2016 are on Page 21.

60-90

Average length (in minutes) of a tumor board meeting at Weill Cornell Medical Center. Radiologists play key roles on the tumor boards that represent the future of cancer care. Read more on Page 13.

400

The number of onsite patient and family member advisors serving the University of Michigan Health system's Patient and Family Centered Care Program. Read more about this successful quality improvement initiative on Page 9.

Member Spotlight

Omolola M. Atalabi, MBBS

Dr. Atalabi is a consultant radiologist at the University College Hospital and an associate professor in the College of Medicine, University of Ibadan in Nigeria. She received an RSNA Derek Harwood-Nash Fellowship in 2007 and the Hitachi Medical Systems/RSNA Research Seed Grant in 2010. An RSNA member since 2003, Dr. Atalabi serves on the Committee on International Radiology Education CIRE) and as a regional committee chairman for Middle East/Africa. She is a regular attendee and faculty member at RSNA annual meetings.

What or who sparked your interest in radiology?
During my residency training in Nigeria about 18 years ago, I learned from Sulaiman B. Lagundoye, MD, and Oluremi Ogunseyinde, MBBS, about this big conference in Chicago they attended each year. They brought back RSNA souvenirs for us which sparked my curiosity. I researched on the internet and learned that I could attend as a resident and that RSNA is actually the umbrella organization for radiologists all over the world. As soon as I attended my first conference, I instantly became an RSNA disciple.

What would you describe as the biggest professional challenge you face today?
There are a number of "biggest" challenges:

- Lack of sub-specialization in radiology which is stifling the progress of the profession in my environment
- Lack of up-to-date radiologic equipment
- Dearth of training and experience in cutting-edge radiologic investigations and procedures by our radiologists

What is the biggest reward?
When I am able to make a correct diagnosis and change the direction of a patient's management for good — that is the most rewarding to me.


Atalabi

How does volunteering for RSNA help you in your daily practice?
Volunteering is how I give back to RSNA in a very small way compared to what the organization has given to me. Volunteering has enabled me to network and interact with colleagues from all over the world where I am able to appreciate and gain deeper insight into radiology as a profession.

How do you like to spend your free time?
There is still so much to do that free time is a luxury for me. However, when I am free I read novels written in my native language (Yoruba).

DeStigter Receives ACR Global Humanitarian Award


DeStigter

Kristen DeStigter, MD, of Burlington, Vt., was honored with an individual Global Humanitarian Award by the American College of Radiology Foundation (ACRF) during the recent ACR annual meeting in Washington, DC.

Dr. DeStigter, chair of RSNA's Committee on International Radiology Education (CIRE), is co-founder and president of Imaging the World, an organization that created a new sustainable model for ultrasound imaging, making basic life-saving diagnoses accessible in the poorest regions of Africa. Since its founding in 2008, the organization has successfully incorporated obstetric ultrasound (US) examinations into routine care at lower-level health clinics in rural Uganda by training healthcare workers to perform high-quality point-of-care US.

Dr. DeStigter is the John P. and Kathryn H. Tampas Professor and interim chair of radiology at the University of Vermont/University of Vermont Medical Center, in Burlington, where she is an attending radiologist with the University of Vermont Medical Group.

Dr. DeStigter was named the RSNA 2016 Outstanding Educator and will receive the honor at RSNA 2016.

ABR Announces Pilot Online MOC Assessment

The American Board of Radiology (ABR) is developing a pilot online assessment for its Maintenance of Certification (MOC) Part 3: Assessment of Knowledge, Judgment and Skills. If successful, the pilot assessment could replace the current 10-year requirement for a traditional proctored examination with a continuous online model that will provide immediate feedback including the question's rationale, a critique of the answer and additional educational material.

The ABR anticipates launching the pilot in 2018 with full implementation beginning as early as mid-2019. For more information, visit *theabr.org*.

ISMRM Awards Majumdar 2016 Gold Medal


Majumdar

Sharmila Majumdar, PhD, professor and vice-chair of research in the Department of Radiology and Biomedical Imaging at the University of California, San Francisco (UCSF), was awarded the International Society for Magnetic Resonance in Medicine (ISMRM) gold medal during its recent annual meeting in Singapore.

Dr. Majumdar is a former member of the RSNA Research Study Section and the RSNA Research Development Committee. She is a past advisor for the RSNA Scholar Advisor Panel and a past member of RSNA annual meeting faculty.

2016 RSNA Editorial Fellows Announced


Vernooij


Buch

Meike Willemijn Vernooij, MD, PhD, has been named the 2016 RSNA William R. Eyler Editorial Fellow, and **Karen Buch, MD,** is the 2016 RSNA William W. Olmsted Trainee Editorial Fellow.

Dr. Vernooij is a neuroradiologist, head and neck radiologist and associate professor in radiology at Erasmus University Medical Center (MC), in Rotterdam, the Netherlands. A member of the RSNA Education Exhibits Awards Committee, she is also an associate professor in epidemiology at Erasmus MC.

Dr. Vernooij earned her medical degree and postdoctoral degree (PhD) from Erasmus University and completed her residency and clinical fellowship at Erasmus MC. Dr. Vernooij was a visiting scholar at the J. Philip Kistler Sroke Research Center at Massachusetts General Hospital (MGH) in Boston.

Presently, Dr. Vernooij is an associate editor of the *Journal of Alzheimer's Disease (JAD)* and has been a reviewer for numerous other journals, including the *New England Journal of Medicine* and the *Journal of the American Medical Association*.

Dr. Buch, a clinical fellow and graduate assistant at MGH, earned an undergraduate degree in electrical engineering with a second major in biomedical engineering from Tufts University. She graduated from the University of Massachusetts Medical School before completing her diagnostic radiology residency at the Boston University Medical Center in 2015.

Dr. Buch has received numerous prominent national awards, including the 2014 RSNA Roentgen Resident/Fellow Research award and the 2013 RSNA Presidents Circle Research Resident Grant.

Dr. Buch serves as an editor for the American College of Radiology (ACR) Case in Point series and as a reviewer for the *American Journal of Roentgenology (AJR)*.

Both fellows will work with *Radiology* Editor Herbert Y. Kressel, MD, in Boston, and *RadioGraphics* Editor Jeffrey S. Klein, MD, in Burlington, Vt. The Eyler Editorial Fellowship lasts one month and the Olmsted Trainee Editorial Fellowship lasts one week. Each fellow will also visit the RSNA Publications Department at RSNA Headquarters in Oak Brook, Ill. Dr. Vernooij will also work with the RSNA editorial team at RSNA 2016.

Read about recent *Radiology* research co-authored by Dr. Vernooij on Page 11.

THIS MONTH IN THE *RSNA NEWS* ONLINE VERSION

Get more of this month's news online at *RSNA.org/News*.

David F. Kallmes, MD, Deputy Editor of *Radiology*, and researcher Meike W. Vernooij, MD, PhD, discuss the *Radiology* research featured in this month's story, "Brain MRI Shows Subtle Changes in White Matter in Aging Adults."

RSNA News

RSNA NEWS
August 2016 • Volume 26, Issue 8
Published monthly by the Radiological Society of North America, Inc.
820 Jorie Blvd., Oak Brook, IL 60523-2251. Printed in the USA.

POSTMASTER: Send address corrections or changes to: *RSNA News*, 820 Jorie Blvd., Oak Brook, IL 60523-2251

Non-member subscription rate is $20 per year; $10 of active members' dues is allocated to a subscription of *RSNA News.*

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My Turn:

Quality Improvement as a Team Sport

BY JAMES R. DUNCAN, MD, PHD

Duncan

"Trust is knowing that when a team member does push you, they're doing it because they care about the team."
Patrick Lencioni

Improving quality has gained considerable attention throughout healthcare. The need is clear but too often improvement efforts fail because quality is considered an ethereal entity that defies precise measurement. In order to improve the value of imaging and image-guided procedures, we will need a more robust and objective definition of quality. My working definition is derived from other fields, where quality of a product or service is defined as the probability that it meets or exceeds expectations.

The question then becomes, whose expectations are we trying to meet or exceed? Despite its complexities, healthcare ultimately boils down to serving the needs of patients and their families. Granted, our system includes myriad other parties, but if we understand and fulfill the expectations of patients, the needs and demands of referring physicians, insurers and other stakeholders fall into place.

A Shift in Perspective

So what created and now drives patient expectations? Cultural icons like Marcus Welby, MD, certainly helped foster the expectation that a patient's every need could be diagnosed and solved in 60 minutes without breaking the bank. The marketing campaigns of pharmaceutical companies and hospitals reinforce the notion that every need can be addressed by new miracle drugs or skillful use of the latest technology. Patient expectations are also shaped by assurances that the planned imaging study or image-guided procedure is safe, quick and effective. All too often, we find ourselves facing an uphill battle, weighted down with unrealistic expectations.

We tend to view imaging and image-guided procedures from our perspective. It takes mere seconds to acquire hundreds of CT images and a few minutes to perform an image-guided biopsy. But from the patient's perspective, these procedures include traveling to our workplace, waiting for the procedure, and post-procedure recovery. Other industries have recognized the value of viewing their processes from an external perspective. They give their customers greater control over the interaction and allow them to tailor it to their specific needs. For example, customers are allowed to choose which shipping option best matches what they value. Even when steps are outside the customer's direct control, savvy providers create transparent processes that allow customers to update their expectations. For example, an airline posts information that allows customers to track flight arrivals and departures.

From this external perspective, one realizes that interpreting images and performing procedures is just a small part of the overall patient experience. Difficulty with parking, confusing directions within the medical center, or an offhand remark at the reception desk are all readily apparent to the patient. By contrast, the radiologists' expertise is largely hidden from view. However, imagine what patients think when they encounter reports that contain obvious errors. Clearly, it is crucial that we understand patients' expectations so that we can begin aligning them with what our specialty and its associated systems can reliably provide.

Taking a Team Approach

This shift in perspective places great emphasis on teamwork, and more patients want to become part of that team. As the team expands and becomes more diverse, this becomes a Herculean task. Still there is a clear need to create the shared mental models that provide reasonable expectations for both patients and providers. In this system, everyone will need basic quality improvement training to acquire the knowledge, skills and abilities necessary to identify opportunities and practice data-driven process improvement. As teams redesign their systems to better serve patients, they will also need the support of coaches, instructors and leaders, who will in turn require help from a third level — the experts from the burgeoning science of quality improvement.

Creating a seamless team that reliably predicts and satisfies a patient's needs is a lofty ambition. But it is one worth pursuing since someday you or a family member will likely step into the role of the patient. In your hour of need, what will you want from your team?

Dr. Duncan is a professor of radiology, Division of Interventional Radiology, at Mallinckrodt Institute of Radiology, Washington University School of Medicine, St. Louis. He is chair of the RSNA Quality Improvement Committee. Dr. Duncan received three RSNA Research & Education (R&E) Foundation grants in recent years.

Editor's Note

The RSNA Quality Improvement Symposium, "Why Quality is the Key to Patient Experience and Value," will be held at RSNA 2016. *Read more on Page 9.*

RSNA Symposium Will Shine World Spotlight on Liver Imaging

BY MIKE BASSETT

As the world's largest medical meeting, the RSNA Scientific Assembly and Annual Meeting is the perfect setting to unite experts from across the globe for a one-day symposium focusing on an area of radiology of particular international significance — liver imaging.

"If you looked at the radiology journals over the last 10 years and had to pick one topic that is among the most published, has the most clinical relevance and still presents some of the most difficult problems for radiologists, it would be the detection, staging and characterizing of liver cancer, particularly in patients with chronic liver disease," said RSNA President Richard L. Baron, MD, professor of radiology at the University of Chicago Medical Center.

Organized by RSNA, the symposium to be held Friday, Dec. 2, at RSNA 2016, features a full day of sessions presented by top researchers from around the world. The symposium is a joint effort of RSNA and four of the world's leading abdominal imaging societies — the French Society of Abdominal Imaging (SIAD), the Society of Abdominal Radiology in the U.S., the Japanese Society of Abdominal Radiology and the Korean Society of Abdominal Radiology, which have led the way in diagnosing and characterizing liver lesions, Dr. Baron said.

Dr. Baron — who finished his abdominal imaging fellowship more than 35 years ago — says abdominal imaging, specifically as it relates to liver cancer, "has really drawn the world's research and educational communities together in ways that have dramatically impacted radiology's participation in the clinical care of these patients.

"This is one area where radiologists play one of the key roles in determining patient treatments and outcomes," he added. "So it's important for radiologists worldwide to be aware of not just the fundamentals of liver imaging,

"This (liver imaging) is one area where radiologists play one of the key roles in determining patient treatments and outcomes," said RSNA President Richard L. Baron, MD, professor of radiology at the University of Chicago Medical Center, and organizer of a day-long liver symposium to be held Friday, Dec. 2, at RSNA 2016. The symposium is a joint effort of RSNA and four of the world's leading abdominal imaging societies — the French Society of Abdominal Imaging, the Society of Abdominal Radiology, the Japanese Society of Abdominal Radiology and the Korean Society of Abdominal Radiology.
Image courtesy of the University of Chicago Medicine.

> *"It's important for radiologists worldwide to be aware of not just the fundamentals of liver imaging, but new and advanced information that will keep them up to date."*
>
> RICHARD L. BARON, MD


Zins


Murakami


Lee

but new and advanced information that will keep them up to date."

Liver Symposium Has Roots in France

According to Marc Zins, MD, chief of medical imaging at the Hôpital Paris Saint-Joseph, the original idea for a symposium actually came out of SIAD during the 2015 Journées Francophone de Radiologie.

"Richard (Dr. Baron) had the idea to organize an international symposium involving all countries with a special interest in and academic work on liver tumors," Dr. Zins said.

"The RSNA annual meeting is one of the best venues anywhere in the world, at any time, to bring together the leading authorities who have developed the research and education tools to accomplish this," said Dr. Baron, who will present, "Unusual Appearances of HCC and Lesions that Simulate HCC: How to Put These in Clinical Perspective," at the symposium.

In Europe, France is one of the leaders in liver tumor imaging, Dr. Zins said. "In particular, French scientists have much experience in imaging of benign liver tumors and were pioneers in the assessment and management of focal nodular hyperplasia and hepatic adenomas including new subtypes."

Dr. Zins also pointed out that French liver surgeons have been at the forefront of technical innovation over the last 30 years and have led the way in liver transplantation.

Hepatitis Central to Liver Imaging Research in Asia

Abdominal imaging has also become critically important to radiology practice in Asia, particularly in countries such as Japan and South Korea that see relatively high rates of liver disease.

"It is very important to study liver imaging in our country, because viral hepatitis is a common disease in Asia, including Japan," said Takamichi Murakami, MD, chair of the Department of Radiology, Kindai University Faculty of Medicine in Osaka, Japan, who will be moderating the session, "Novel Concepts in Hepatobiliary Tumor Imaging Symposium: State-of-the-Art Imaging Techniques."

Dr. Murakami said there are now about 2.5 million viral hepatitis patients in Japan — 80 percent who have hepatitis C and 15 percent with hepatitis B.

"These patients have a high risk of developing hepatocellular carcinoma (HCC) and to treat HCC and improve a patient's prognosis, it is important to detect HCC at an early stage and diagnose the liver tumor correctly," he said.

South Korea also experiences relatively high rates of liver disease, something that has clearly caught the attention of much of the country's radiology community, said Won Jae Lee, MD, chair of the Department of Radiology, Samsung Medical Center, Sungkyunkwan University in Seoul, who will present the lecture, "Imaging Spectrum of Benign and Malignant Vascular Tumors: How to Avoid Misdiagnosis."

Dr. Lee noted that South Korean radiologists account for a large number of publications in abdominal imaging. "The joint symposium will be a golden opportunity for us to introduce our research to a larger audience," Dr. Lee said.

Along with appealing to abdominal imagers, Dr. Zins is hopeful the symposium will be of interest to general radiologists as well.

"We hope that this symposium will be of high interest to all radiologists and not only subspecialized radiologists, since the topics that have been selected will also focus on daily practice for the diagnosis and management of most benign and malignant liver tumors," Dr. Zins said. "It will also be a unique opportunity to participate in exchanges about our different practices in managing liver tumors in North America, Asia and Europe."

WEB EXTRAS

Access the full roster of RSNA 2016 Liver Symposium sessions at *RSNA.org/Register*.

RSNA Joint Partnerships Strengthen Radiology Across the Globe

BY MARY HENDERSON

Each year, tens of thousands of radiologists from around the world travel to Chicago for the RSNA annual meeting. Increasingly, RSNA is also on the road, reaching across borders to visit other radiologic societies to share knowledge and advance radiology on an international level.

RSNA experts were among the roster of speakers at the 2016 Jornada Paulista de Radiolgia (JPR) held in May in Brazil, which also featured lectures from SPR radiologists. *Left:* Adam Flanders, MD, presented a session on IT in radiology. Each session was delivered in the speaker's native language and translated into Portuguese, Spanish or English. Image courtesy of the Sociedade Paulista de Radiologia

"Radiology is an international sport," said James Borgstede, MD, RSNA Board of Directors liaison for international affairs and vice-chair of radiology at the University of Colorado in Aurora. "The field can't be defined by the borders of countries. There is great clinical care, education and research happening throughout the world."

RSNA's 54,314 members come from 140 countries across the globe. Of those, 15,722 are from outside North America.

The goal of joint symposiums coordinated by RSNA and radiology societies in Brazil, Asia and Europe is to strengthen each organization and the profession as a whole, providing radiologists around the world with critical continuing medical education (CME) and an opportunity to share knowledge of regional diseases and treatment approaches.

"We have so much to learn from each other," said RSNA President Richard L. Baron, MD, professor of radiology at the University of Chicago Medical Center. "There is no single country or region that cannot benefit from the knowledge of individuals from different parts of the globe. World travel and relocation has become so commonplace, diseases that used to be seen only in certain parts of the world are now encountered worldwide."

RSNA Connects with JPR in Latin America

A strong relationship between RSNA and the Sociedade Paulista de Radiologia (SPR) resulted in the first co-sponsorship of Jornada Paulista de Radiologia (JPR) 2014 in Sao Paulo, Brazil, followed by a second joint congress this past spring (April 28–May 1). A third joint meeting is planned for 2018.

"JPR is the largest radiological meeting in Latin America and we're pleased to be a part of it," Dr. Borgstede said.

The 2016 congress included presentations from SPR and RSNA radiologists on a variety of traditional organ-based systems as well as professionalism. Each session was delivered in the speaker's native language and translated into Portuguese, Spanish or English.

"Traditionally, SPR does not offer presentations on leadership, practice management and research," said Valerie P. Jackson, MD, RSNA Board of Directors liaison for education and executive director of the American Board of Radiology. "In 2014, we offered a professionalism track program, but it wasn't well attended. This year, attendance was up. People are starting to recognize the value.

"This type of collaboration allows us to develop an


Borgstede


Baron


Jackson


Choi


Sirlin


Ehman

RSNA/AOSR Sponsor 2016 Joint Symposium

The RSNA and the Asian Oceanian Society of Radiology (AOSR) are sponsoring the RSNA/AOSR Symposium, to be held at the Asian Oceanian Congress of Radiology (AOCR) from Aug. 19–21, 2016, in Beijing, and repeated at RSNA 2016 from Nov. 27–Dec. 2, 2016, in Chicago. For more information, go to *www.aocr2016.org/csrcms/aocr/index.jhtml.*

understanding of our colleagues' culture and radiological practices in different countries," Dr. Jackson added.

RSNA/AOSR Joint Symposium Spotlights Liver Cancer

New this year, RSNA and the Asian Oceanian Society of Radiology (AOSR) are sponsoring a joint program, the RSNA/AOSR Symposium, which will address a growing health issue of concern on both continents: liver cancer.

The symposium, to be held at the Asian Oceanian Congress of Radiology (AOCR) on Aug. 19–21 in Beijing, and repeated at RSNA 2016, will feature two speakers from each society discussing the role of imaging in liver transplantation.

"I think the alliance between the AOSR and RSNA is the basis of a win-win strategy," said organizer Byung Ihn Choi, MD, PhD, clinical professor of radiology at Chung-Ang University Hospital, Seoul, who received RSNA honorary membership in 2007.

In addition to bringing RSNA speakers to the AOCR, Dr. Choi said the joint symposium has been effective in laying the groundwork for future collaborative activities, including an International Visiting Professor (IVP) program in 2017.

RSNA/AOSR speaker Claude B. Sirlin, MD, vice chair of translational research in the Department of Radiology at the University of California San Diego, said imaging plays a major role in determining which patients are most in need of and likely to thrive following liver transplantation, the most successful treatment for liver cancer.

"From my perspective, an essential step is standardizing the language we use in radiology to interpret images," Dr. Sirlin said. "We want to illustrate the utility of LI-RADS (Liver Imaging Reporting and Data System) in determining who is eligible for a transplant."

"ESR Meets the USA" Planned for 2017

For years, the RSNA annual meeting has highlighted its members who live and practice radiology outside the U.S. with Country Presents showcases, including this year's the Netherlands Presents and Turkey Presents sessions. In 2017, RSNA will be in the spotlight when "ESR Meets the USA" during the annual congress of the European Society of Radiology (ESR).

In a session entitled "Precision Imaging and Patient Experience," speakers from the RSNA and the American College of Radiology (ACR) will address clinical decision support, quantitative biomarkers and the RSNA's Radiology Cares® program and ACR's Imaging 3.0™ initiative.

The 2017 leaders of the ESR, RSNA and ACR, Paul M. Parizel, MD, Richard L. Ehman, MD, and James A. Brink, MD, respectively, will preside over the session.

"A joint RSNA/ACR presentation will describe how the two organizations have teamed up to promote radiology practice that truly puts the needs of the patient first," said Dr. Ehman, RSNA Board of Directors president-elect and professor of radiology and Blanche R. & Richard J. Erlanger Professor of Medical Research at the Mayo Clinic in Rochester, Minn. "RSNA will also present an update on the Quantitative Imaging Biomarkers Alliance (QIBA), which has successfully increased recognition of the power of quantitative imaging and is now truly international in scope."

The RSNA/ESR partnership will continue with a joint symposium on hybrid imaging to be held at RSNA 2016 and the European Congress of Radiology.

Globalization Heightens Radiology's Reach

All three programs — in Brazil, Asia and Europe — are evidence of the growing globalization of RSNA and the Society's efforts to both serve and benefit from its widespread membership and alliances with other radiologic organizations.

"By working together to further radiology, all of these organizations and their members will benefit in ways that go beyond what can be accomplished in isolation," Dr. Baron said.

> *"The field can't be defined by the borders of countries. There is great clinical care, education and research happening throughout the world."*
>
> JAMES BORGSTEDE, MD

Patients, Families Key to Improving Healthcare Quality and Value

BY PAUL LATOUR

Not long ago, patients and their families had little input into the decisions made by their healthcare providers. That is all changing as more and more healthcare providers shift toward a patient- and family-centered care (PFCC) model.

Patient Focus

Tips for Better Radiologist/Patient Communication

- Give patients the results as soon as possible. Don't force the patient to track down their own results. Always call, even if the results are normal.
- Make sure that the person who calls with the results can answer questions and has adequate time to discuss next steps and provide additional resources.
- Don't send results — especially if they are negative — by text, mail, or leave a phone message on a patient's answering machine. Talk to the patient.
- Choose your words carefully. Be as clear and direct as possible. Be honest and straight forward yet compassionate and empathetic. Be reassuring and provide hope even if the news is bad.
- When calling with results, first ask if the patient is in a private place to receive the news. If giving the news in person, take the patient to a private location.

University of Michigan Health System Patient and Family Centered Care program.

WEB EXTRAS

• Access RSNA's full roster of Quality Improvement resources at *RSNA.org/Quality-Improvement.*
• For more information on the Institute for Patient- and Family-Centered Care go to *www.ipfcc.org.*
• For more information on Patient and Family Centered Care at the University of Michigan, go to *www.uofmhealth.org.*

"Gone are the days of the doctor being on a pedestal delivering care downward to a patient who does just what the doctor says," said Ella A. Kazerooni, MD, MS, professor of radiology, associate chair for clinical affairs, director of cardiothoracic radiology and chair of the Radiology Service Excellence Program at the University of Michigan in Ann Arbor.

"Healthcare today is much more interactive. Patients want their values and their belief systems taken into account when they're receiving their healthcare. They want to be fully engaged and participatory," added Dr. Kazerooni, a member of the RSNA Quality Improvement Committee (QIC).

"Why Quality is the Key to Patient Experience and Value" is the focus of the RSNA Quality Improvement (QI) Symposium at RSNA 2016. The symposium will examine how to define and measure value, and explore ways to learn from mistakes.

Better understanding of a patient's viewpoint is an important part of improving value for healthcare providers who often cannot imagine things from the patient's perspective due to the inherent bias of being part of healthcare.

"What we do every day might seem routine to us — we're in the middle of it all day. But to a patient or family member, it's not routine. It's often the first time they are coming for healthcare and most people don't have a family member in healthcare who can help translate for them," Dr. Kazerooni said.

'The Key Word is Partnership'

To better facilitate communication among physicians, patients and families, the University of Michigan Health System (UMHS) established their PFCC program in 2007. It is one example of many similar programs being instituted across North America, according to the Institute for Patient- and Family-Centered Care (IPFCC).

Creating a patient- and family-focused culture in healthcare is the goal of Kelly Parent, the Patient- and Family-Centered Care (PFCC) program specialist for quality and safety at the University of Michigan Health System (UMHS). She will discuss her UMHS experiences during the RSNA 2016 Quality Improvement symposium.

Patients Focus of RSNA 2016 Quality Improvement (QI) Symposium

"Why Quality is the Key to Patient Experience and Value," will be held Tuesday, Nov. 29, at RSNA 2016.

SESSION I (MSQI31)

8:30 to 10 a.m.

What is Value?
- Value Through the Patient's Eyes: Patient- and Family-centered Care
- Delivering Value to Patients: The Radiologist's Perspective
- Patient/Family Engagement as Part of QI

SESSION II (MSQI32)

10:30 a.m. to Noon

Measuring Value
- Patient Perspective
- How a Radiology Department Measures and Tracks Value
- How Payers Measure Value

SESSION III (MSQI33)

1:30 to 3 p.m.

Quality and Value: Learning from Mistakes
- Common Mistakes in Performance Improvement and How to Avoid Them
- Uncommon Champions of Value
- The Future of Value and Quality in Radiology: What Will Patients Demand in 2015?

RSNA 2016 will also offer the Special Interest Session (SPSI22), "A New Model of Patient Care: Value over Volume — a RAD Talk." Register for these and all RSNA 2016 courses at *RSNA.org/Register.*

When done right, patient- and family-centered care results in the provision of high quality and safe care. "Everyone deserves to receive dignified and respectful care, to be communicated with and listened to, and to engage in decision making," said Kelly Parent, the PFCC program specialist for quality and safety at UMHS.

Kazerooni

Parent's daughter was 9 years old when she was diagnosed with medulloblastoma, a malignant brain tumor, and treated at C.S. Mott Children's & Women's Hospital at UMHS. Her husband, a neurologist at the hospital, knew the physicians caring for their daughter as well as the medical language that they used.

Because of that familiarity, the care experience was ideal, given the circumstances. For example, the Parents received frequent updates throughout their daughter's long surgery to keep them abreast of the progress. While she appreciated the special attention, Parent realized that every family should have the same access.

"Everybody deserves the same treatment — equity in healthcare is what patient- and family-centered care is all about," said Parent, who also serves as IPFCC's program specialist for patient and family partnerships. Through collaboration with staff and faculty, resources were allocated and a process was designed to provide all families with frequent updates during long surgical procedures at C.S. Mott.

While the IPFCC boasts 1,500 individual members to its online network, Parent said many healthcare institutions have been slow to adopt official PFCC programs or initiatives.

Massachusetts is the only state that mandates that all hospitals (acute care, rehabilitation and long-term care) have a patient and family advisory council (PFAC), Parent said.

Even when it comes to visiting hours, Parent said changing the traditional mindset of hospitals is difficult. She said that staff at UMHS and other places that have truly adapted a PFCC culture no longer ask family members to leave at certain times.

"We recognize that presence and partnership with family members are important to the well being of the patient," Parent said, adding that "family" is whoever the patient deems important to his or her health and well-being and could be defined as a good friend or neighbor.

The UMHS program recruits and trains patients and family members to serve as advisors on a variety of clinical committees and boards across the system. They work on more than 30 councils to provide insights into how healthcare professionals can provide better care for their patients.

"The key word is partnership. Without these advisor partnerships, we cannot truly understand what patients and families truly need. But we also train our advisors how to partner effectively. We do not go into meetings with demands — rather, we go in with a willingness to collaborate," said Parent, who will discuss her UMHS experiences during the RSNA 2016 QI symposium (See sidebar).

The UMHS program has more than 400 onsite patient and family member advisors serving throughout the system in areas as diverse as facility design and peer mentoring programs.

The program also has more than 800 "e-advisors" — an online list of patients and family members who review materials and complete surveys, providing quick access to determine a direction or trend in patient and family opinion.

Dr. Kazerooni said the e-advisors provide a valuable perspective to her job.

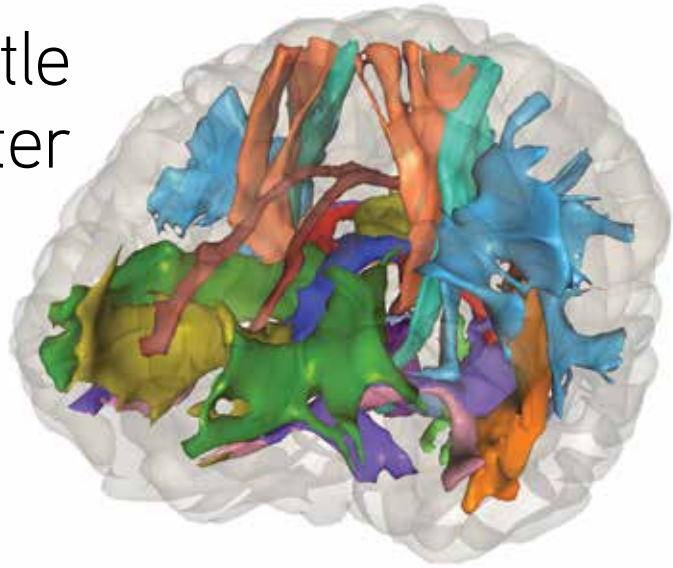
"The ultimate goal is better outcomes from healthcare," she said. "The right healthcare at the right place and at the right time. By having patients' voices involved, we can do that much better."

Dr. Kazerooni added that the University of Michigan's radiology department is surveying e-advisors to learn how patients prefer to receive their radiology reports.

"Do they want the reports right away? Do they want to add a step where referring physicians have an opportunity to review the results first and translate them? We want to discover what patients want, not what we think they want," she said.

> *"Gone are the days of the doctor being on a pedestal delivering care downward to a patient who does just what the doctor says."*
>
> ELLA A. KAZEROONI, MD

Brain MRI Shows Subtle Changes in White Matter in Aging Adults



BY RICHARD DARGAN

Researchers have used advanced MRI techniques to detect microscopic changes in the brain's white matter as people age, according to a new study from the Netherlands.

Published in the May issue of *Radiology*, the research suggests that MRI measurements of white matter microstructure could be used to track brain health over time and contribute to earlier detection of dementia, researchers said.

Imaging white matter in the brain has become a more active area of research as MRI technology continues to develop. Abnormalities in white matter tracts — groups of axons, or nerve fibers, wrapped in a protective sheath of a fatty substance called myelin — have been linked to many neurological diseases associated with aging, including dementia.

"We and other researchers have previously shown that white matter disease relates to cognitive decline and risk of dementia," said study lead author Meike Vernooij, MD, PhD, neuroradiologist and associate professor at Erasmus University Medical Center in Rotterdam. "It is increasingly understood that this visible white matter disease is only the tip of the iceberg and that the microstructure of the white matter may actually change earlier, and this may impede communication across brain regions."

Much of the existing knowledge of white matter abnormalities is based on cross-sectional studies that examine one point in time. For the new study, Dutch researchers performed a baseline MRI scan on middle-aged and older adults and then performed a follow-up scan two years later, allowing them to track changes in the white matter over time.

Researchers used a diffusion tensor imaging (DTI) sequence to study microstructural change in white matter. DTI was used to obtain measurements including global fractional anisotropy (FA), the degree of directionality of diffusion of water along white matter tracts, and mean diffusivity (MD), a measure of the net diffusion of water, regardless of direction.

> "DTI has a potential role in early detection of the pathology of Alzheimer's disease or mild cognitive impairment, or to identify those at risk earlier."
>
> MARIUS DE GROOT, PHD

"Both measures are thought to complement each other in providing information on white matter disease, such as axonal degeneration and myelin loss, though it is as yet unclear exactly what pathology each represents," Dr. Vernooij said.

The researchers obtained baseline scans and follow-up data on 501 people ranging in age from 64 to 91 years, with a mean age of 70. At baseline, the subjects had normal-appearing white matter, or white matter that would appear normal to a radiologist examining a brain scan.

Over the two-year follow-up interval, average FA decreased among the subjects while MD increased, indicating white matter microstructural deterioration. Previous research by Dr. Vernooij and colleagues determined that lower FA and higher MD within normal-appearing white matter were related to slower information processing and motor speed and inferior global cognition. White matter degeneration was more pronounced in older persons, while MD appeared to be a more sensitive measure of white matter microstructural deterioration.

"We found more pronounced changes in aging with MD than with FA," Dr. Vernooij said. "This may relate to FA being more sensitive to crossing fibers and thus potentially less able to show changes in aging in some brain areas."

The results indicate that DTI is not only capable of detecting microstructural changes, but measuring and monitoring the rate of change over a relatively short time period, which could have value in a clinical setting, Dr. Vernooij said.

While the study looked at white matter tracts throughout the brain, ongoing and future research will focus on the role of individual tracts in cognition. The white matter is divided into functionally different tracts and it is likely that there are many tracts that contribute to cognitive decline as people age. Since they connect different areas of gray matter, these tracts are the parts of the white matter that subserve specific brain functions.

"It is this close analogy to brain function that makes us argue that tracts are a good compromise in scope between localized analysis, such as the analysis presented here, and brain-wide analyses," said study first author Marius de Groot, PhD, postdoctoral researcher at Erasmus University Medical Center. "All three analysis strategies have their merits though, and will continue to reveal insight in the brain."

DTI Has Potential Role in Diagnosing Early Dementia

These findings also suggest that DTI may have a complementary role in the diagnosis of dementia-related conditions like Alzheimer's disease (AD) and mild cognitive impairment (MCI). DTI is non-invasive and could more easily be implemented in clinical evaluation of people suspected of dementia, or even for early detection in asymptomatic people.

"Our study gives insight into what happens with this microstructure over time, and we see that there is widespread change, independent of those visible white matter changes, so indeed it may be a more subtle and early brain change," Dr. Vernooij said. "DTI has a potential role in early detection of the pathology of AD or MCI, or to identify those at risk earlier."

The technology does have limitations, Dr. de Groot added. DTI cannot successfully model multiple white matter tracts running through the same point, limiting the interpretation of changes in regions with many crossing fibers. More advanced diffusion acquisition strategies, including many more diffusion orientations, are needed for this.

"It is important to realize though, that more advanced acquisitions require longer imaging times, and this may limit the feasibility in large observational studies," Dr. de Groot said.

Rotterdam Study Focuses on Neurological Disease

This research is just one recent example of the advances made possible through the landmark Rotterdam Study, a large population-based cohort that began in 1990 and has grown to include 15,000 middle-aged and elderly participants from Rotterdam.

de Groot

Vernooij

Neurological disease has been one of the main topics of research in the study. Participants receive a comprehensive initial checkup with interviews and a medical examination and are followed every three to four years for changes. The brain imaging protocol consists of structural and functional scanning, along with advanced techniques like DTI.

"The Rotterdam Study has a high response rate, with over 80 percent of participants taking part in the brain MRI," Dr. de Groot said.

Brain imaging was first incorporated into the Rotterdam study in 2005 and researchers currently have more than 5,000 unique baseline scans and follow-ups for approximately 3,500 people. They expect that the study will continue to yield more information about the aging brain in the coming years.

"We want to study white matter change over a longer time window," Dr. Vernooij said. "Most importantly, we will further explore how the trajectory of change relates to cognitive decline and the risk of dementia."

Neuroimaging Session Featured in The Netherlands Presents at RSNA 2016

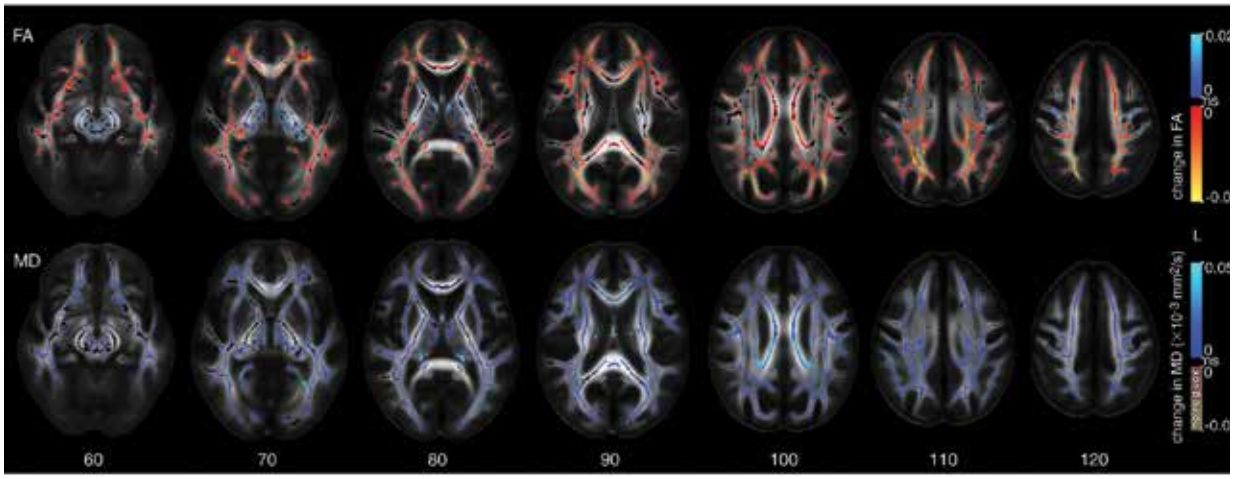
Neuroimaging will be the focus of the RSNA 2016 session, The Netherlands Presents, "Advances in Neuro-degenerative and Neuro-vascular Diseases," presented by Meike Vernooij, MD, PhD, from 10:30 a.m. to Noon, Monday, Nov. 28, at RSNA 2016. The Netherlands and Turkey are spotlighted in this year's RSNA Country Presents sessions that highlight radiology from around the world.

Register for this and all RSNA 2016 courses at *RSNA.org/Register*.

Watch the September *RSNA News* for a preview of the RSNA Country Presents sessions at RSNA 2016.

WEB EXTRAS

Access the *Radiology* study, "White Matter Degeneration with Aging: Longitudinal Diffusion MR Imaging Analysis," and hear a podcast discussion of the research at *RSNA.org/Radiology*.



Change in diffusion characteristics over 2 years of follow-up, corrected for age, sex, imaging interval, intracranial volume, and macroscopic white matter changes. *Top row*: Regions of significant (*P* < *.05*) change in fractional anisotropy (FA) over time. Blue indicates an increase in FA; red and yellow indicate a decrease in FA. Bottom row: Regions of significant (*P* < *.05*) change in mean diffusivity (MD). Blue indicates an increase in MD. No voxels showed a significant decrease in MD. The familywise error rate was controlled using a permutation approach. P values are presented in Figure E2 (online). Results are overlaid on a population-specific average FA image in standard space coordinates, showing nonsignificant (ns) skeleton voxels in black.

Radiologists Play Key Role on Multidisciplinary Tumor Boards

BY SUSAN KREIMER

Subscribing to the notion that multiple heads are better than one, radiologists across the country are playing critical roles on organ-specific tumor boards that represent the future of cancer care.

Along with interventional and diagnostic radiologists, tumor boards typically include medical, surgical and radiation oncologists and pathologists who meet regularly to weigh in on complex cancer cases and recommend treatment plans for patients. The board helps determine the type of tumor, the extent of disease, the risk for progression and a recommended course of treatment.

"Everybody who is a stakeholder in that disease process tries to attend our tumor boards," said David C. Madoff, MD, an interventional radiologist, professor of radiology and vice chair for academic affairs at New York Presbyterian/Weill Cornell Medical Center and a deputy editor for *Radiology*. "All the different disciplines are represented."

Working as part of a multidisciplinary team to plan patient care is part of the larger movement toward personalized medicine, physicians say.

"Tumor boards are a direct extension of the multidisciplinary care model," said Robert E. Merritt, MD, an associate professor of surgery and director of the division of thoracic surgery at The Ohio State University Medical Center. "The goal is to expedite patient care and ensure that we are offering the current standard of care."

At Weill Cornell, tumor boards meet weekly for 60–90 minutes, depending on how many cases physicians bring to the table. Dr. Madoff attends primarily the liver tumor board meetings and occasionally those that focus on lung, pancreatic, breast, colorectal and bone cancers.

Cases are presented for a number of reasons, Dr. Madoff said. A tumor board may want to see results of patients who have undergone treatment, to assess what worked and what did not. Other times, the purpose is to seek colleagues' opinions on how to proceed with a case.

> *"If the decision-making is not straightforward, patients appreciate that all the heads are in the room at the same time."*
>
> DANIEL BROWN, MD

"Sometimes the other members of the tumor board may endorse what you say, so you have more ammunition to go back to the patient with 'This is what the group thought,'" Dr. Madoff explained.

Dr. Merritt, who serves on the lung and esophageal cancer tumor boards, said a common type of case under discussion may involve Stage 3 lung cancer. Team members would assess whether the tumor responded to chemotherapy and radiation therapy and has become operable, or determine if the patient would be an appropriate candidate for clinical trials.

Patients who benefit most from this type of decision-making are those who do not have a clear option for treatment, said Daniel Brown, MD, a professor of radiology and director of interventional oncology at Vanderbilt University, Nashville, who serves on the neuroendocrine tumor board as well as the surgical oncology board, which focuses on colorectal, pancreatic and liver cancers.

"If the decision-making is not straightforward, patients appreciate that all the heads are in the room at the same time," Dr. Brown said.

Radiology Critical to Cancer Care

As multidisciplinary care continues to evolve, the radiologist is still viewed as "the physician's physician" — the one who interprets the images necessary to guide optimal treatment, Dr. Madoff noted. Tumor boards give radiologists added insight into the evaluation and treatment of patients suitable for image-guided interventions, he said.

"Interventional radiology leads the hepatobiliary conference at our institution, which emphasizes the important role that interventional radiology plays in the management of patients with liver malignancy," Dr. Madoff said.

Due to variations in imaging protocols used among institutions, "sometimes the imaging interpretation can be tricky, particularly for MRI studies that are done elsewhere," said Puneet Bhargava, MD, an associate professor of body imaging at the University of Washington in Seattle and editor of *Current Problems in Diagnostic Radiology*.

Dr. Bhargava spends approximately an hour to 90 minutes preparing for each weekly liver tumor board meeting. He reviews images to decide whether he agrees with radiologists' readings from other institutions, while offering his colleagues finer details that may be missing in outside reports. "It's an involved process," he acknowledged, while adding that "our rubber-stamp signing off on these reports helps increase the confidence of our multidisciplinary liver tumor board in terms of what the diagnosis is."

Multiple co-morbidities such as a history of previous myocardial infarctions, diabetes and severe alcohol-related cirrhosis could preclude surgery for an elderly patient with a primary liver tumor. If the tumor resides too close to the heart, the interventional radiologist typically deems it unsafe to perform radiofrequency ablation. But the radiation oncologist might be able to ascertain a "safe window" for administering therapy and may agree to meet with the patient to offer this option.

Meanwhile, the tumor board could decide to review post-radiation imaging at a three-month interval after treatment to assess the patient's response and discuss future options in the event of a residual or


Madoff


Merritt


Brown


Bhargava


Pawlik

a recurrent tumor, Dr. Bhargava said.

When liver metastasis occurs after resection of a pancreatic neuroendocrine tumor, a diagnostic radiologist documents the "true" extent of disease, while a medical oncologist considers starting the patient on chemotherapy or a targeted agent.

An interventional radiologist evaluates if the patient would be best served by embolization to the liver, while a surgical oncologist assesses if resection of the liver tumors is possible, said Timothy M. Pawlik, MD, MPH, MTS, PhD, chief of the division of surgical oncology and director of the Johns Hopkins Medicine Liver Tumor Center Multi-Disciplinary Clinic.

"Sometimes pathology joins the conference," Dr. Pawlik added. "The slides are re-reviewed and we ask, 'Is this the correct diagnosis?' Some patients have a wider choice of options after the tumor board's collective review of the case, robust discussion, and an eventual consensus opinion about next treatment steps."

Tumor Boards Benefit Physician Relationships'

Along with significant benefits to patients, collaboration on tumor boards also helps develop relationships among physicians. When perceived as part of a multidisciplinary team, interventional radiologists are more likely to receive patient referrals from medical, surgical and radiation oncologists, Dr. Brown said.

And as healthcare progresses, the role radiologists play on tumor boards will only continue to expand, Dr. Madoff said.

"The interventional radiologist/oncologist plays a key role on multidisciplinary teams and will have a larger role in the future as molecular medicine continues to grow," he said.

Radiologists play key roles on the tumor boards that comprise a number of specialists who meet regularly to weigh in on complex cancer cases and recommend treatment plans for patients.

The Campaign for Funding Radiology's Future®

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R&E Foundation Reaches Record Level of Grant Funding in 2016

The RSNA Research & Education (R&E) Foundation reached record levels for grant funding in 2016, providing more than $4 million for 101 projects, or 30 percent of the applications received. The R&E Foundation Board of Trustees selected 2016 grant recipients at its meeting in May, and projects begin in July.

The R&E Foundation provides funding for medical students, residents, fellows and faculty at all levels, supporting investigators and educators throughout their careers. From hypothesis-driven basic science, translational and clinical studies to developing new teaching methods, the Foundation supports projects that are changing the way radiologists practice and learn.

A Foundation grant often serves as a pathway to additional funding. Surveys show that R&E grant recipients have gone on to receive over $2 billion in subsequent funding from other sources such as the National Institutes of Health.

RSNA members can take an active role in moving the specialty forward by supporting these grants that represent the future of radiology and related scientific disciplines.

For a full list of 2016 grant recipients and more information on supporting the R&E Foundation, go to *RSNA.org/Foundation*.

INVEST

The RSNA R&E Foundation provides the research and development that keeps radiology in the forefront of medicine. Support your future—donate today at *RSNA.org/Donate*.

INSPIRE

YOUR DONATIONS IN ACTION

RSNA Grant Recipient Targets Diagnosis, Therapy of Biofilm

It is estimated that biofilm – microorganisms encased within a polysaccharide matrix that are resistant to antibiotics and the immune system – cause the vast majority of medical device-related infections.

In 2014, Alexander M. Vezeridis, MD, PhD, received a $30,000 RSNA Presidents Circle Research Resident Grant to pursue his goal to enable diagnosis and therapy of biofilm and infection on implanted biomaterials using radiologic techniques such as ultrasound.

"Having an efficient method to image and quantify biofilm in vivo will advance our ability to enable diagnosis of device-related infections; reduce unnecessary device removals; provide a quantitative method to detect the necessity for and efficacy of emerging biofilm removal therapies; and eventually take advantage of the presence of microbubbles targeted to biofilm to directly treat or potentiate therapy of these infections using ultrasound," Dr. Vezeridis said. "The Research Resident Grant has enabled us to investigate novel ultrasound contrast agents using innovative methodology."

The experience also gave Dr. Vezeridis the opportunity to overcome a research challenge.

"Due to the unforeseen discontinuation of a commercial product used for biofilm growth in pilot data, I created a 3-D-printed flow cell system for growth of mature biofilm," Dr. Vezeridis continued. "This system is very useful for me and other biofilm researchers, and meritorious of publication on its own. The experience has been eye-opening, liberating our creativity in how we approach solving important questions in ultrasound diagnosis and therapy."

Alexander M. Vezeridis, MD, PhD

Dr. Vezeridis plans to translate this work into humans in the near future and pursue a career as an academic radiologist-scientist researching molecular theranostics.

This grant is funded by Presidents Circle donors who contribute $1,500 or more annually to the Research & Education (R&E) Foundation.

Radiology in Public Focus

Press releases were sent to the medical news media for the following articles appearing in a recent issue of *Radiology*.

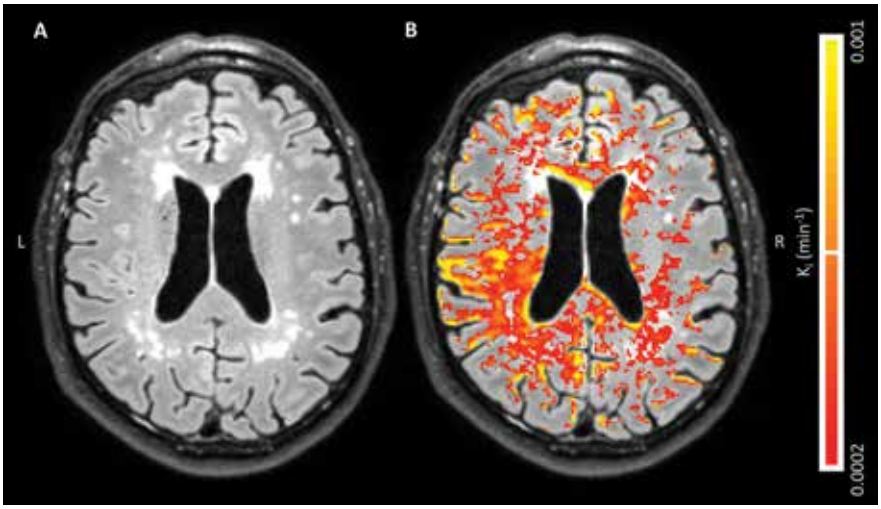
Leaky Blood-Brain Barrier Linked to Alzheimer's Disease

Global, diffusely distributed blood-brain barrier (BBB) leakage in patients with early Alzheimer's disease (AD) suggests that a compromised BBB is part of the early pathology of AD and might be part of a cascade of pathologic events that eventually lead to cognitive decline, according to new research.

Harm J. van de Haar, MSc, of Maastricht University Medical Center in Maastricht, the Netherlands, and colleagues found that the BBB leakage rate was significantly higher in patients compared with that in control subjects in the total gray matter and cortex. For this pilot study, 16 patients with early AD and 17 healthy age-matched control subjects underwent dynamic contrast material–enhanced MRI sequence with dual time resolution for 25 minutes.

Patients had a significantly higher volume fraction of the leaking brain tissue in the gray matter, normal-appearing white matter, deep gray matter and cortex. When all subjects were considered, scores on the Mini-Mental State Examination decreased significantly with increasing leakage in the deep gray matter and cortex.

"We found an increased BBB leakage rate in the gray matter of patients with early AD. By also showing very subtle BBB impairment in the white matter, leakage volume proved to be even more sensitive to the differences in BBB leakage than was the leakage rate," the authors write.

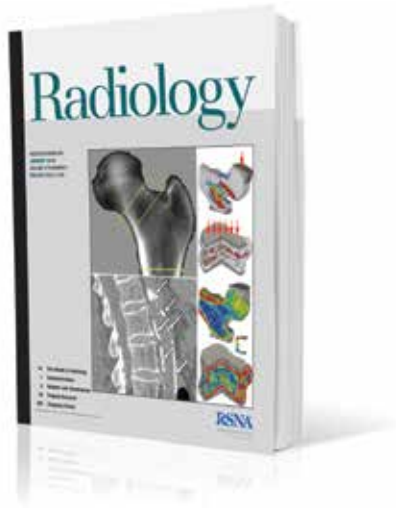


A: Axial fluid-attenuated inversion recovery image in a 68-year-old man with, B, corresponding BBB leakage rate (Ki) maps superimposed. Leakage rate values appear diffusely distributed on both images, with some periventricular hot spots. Leakage manifests in normal-appearing white matter, white matter hyperintensities and grey matter. Voxels with low signal-to-noise ratio in MRI signal intensity were removed, and leakage rate map was masked to cerebrum.

Media Coverage of RSNA

In April, 1,084 RSNA-related news stories were tracked in the media. These stories reached an estimated 1.5 billion people.

Coverage included NBC Nightly News, TODAY, Google News, Yahoo! News, *The Huffington Post, U.S. News & World Report, Chicago Tribune, TIME, MSN.com, NBCNews.com, Today.com, Orlando Sentinel, Boston.com,* WBBM-TV (Chicago), KYW-TV (Philadelphia), WTFX-TV (Philadelphia), WCAU-TV (Philadelphia), WUSA-TV (Washington, D.C.), WRC-TV (Washington, D.C.), WTTG-TV (Washington, D.C.), KDKA-TV (Pittsburgh), KRIV-TV (Houston), KPRC-TV (Houston), KXAS-TV (Dallas), WGCL-TV (Atlanta), WFOR-TV (Miami), WOFL-TV (Orlando), WebMD and *Health.com.*



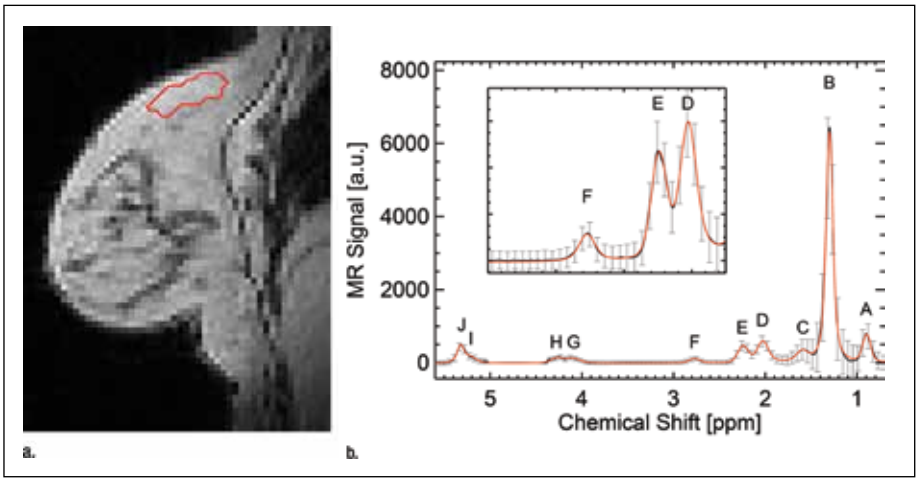
Saturated Fatty Acids Linked to Breast Cancer in Postmenopausal Women

There is a possible link between the presence of invasive ductal carcinoma and fatty acid fractions in breast adipose tissue for postmenopausal women in whom body mass index (BMI) values are not correlated with the fatty acid fractions, new research shows.

Melanie Freed, PhD, of New York University School of Medicine, and colleagues acquired multiple-echo 3-D gradient-echo data for 89 women. Spectra were generated and used to estimate fractions of monounsaturated fatty acid (MUFA), polyunsaturated fatty acid (PUFA) and saturated fatty acid (SFA) in the breast adipose tissue.

For postmenopausal women, MUFA was lower and SFA was higher for women with invasive ductal carcinoma than for those with benign tissue. No correlation was found between BMI and fatty acid fractions in breast adipose tissue. In women with benign tissue, postmenopausal women had a higher PUFA and lower SFA than premenopausal women.

"We used a rapid method that can be used to acquire MRI spectra during a standard clinical diagnostic imaging session. This technique enables the direct measurement of fat composition in vivo in breast adipose tissue in large patient populations," the authors write.



Example analysis: (a-b) a 62-year-old postmenopausal woman with a benign lesion.
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New "Your Radiologist Explains" Videos

Visit *RadiologyInfo.org*, the public information website produced by the RSNA and ACR, to view the newest "Your Radiologist Explains" videos, including:

- Angioplasty & Vascular Stenting
- Direct Arthrography
- Contrast Materials

August Public Information Outreach Activities Focus on Alzheimer's Disease

In August, RSNA's 60-Second Checkup radio program will focus on the use of CT, MRI and PET/CT of the head to diagnose Alzheimer's disease.

For Your Calendar

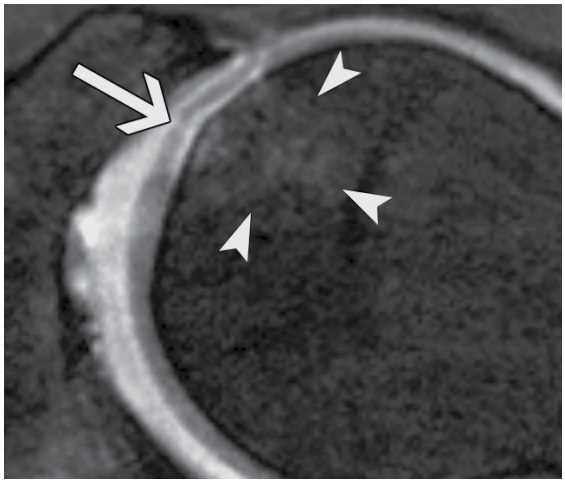
AUG. 19–21
Asian Oceanian Society of Radiology (AOSR)
Beijing, China
Visit the RSNA Booth
• *TheAOSR.org*

SEPT. 8–10
Interamerican College of Radiology (CIR)
Lima, Peru
Visit the RSNA Booth
• *WebCIR.org*

FIND MORE EVENTS AT *RSNA.org/Calendar.aspx*.

Journal Highlights

The following are highlights from the current issues of RSNA's two peer-reviewed journals.



MR image in a 29-year-old elite floorball player with insidious, slowly increasing left-sided hip pain. On the oblique transverse water-excitation true FISP image (11.95/5.39) of the left hip after direct arthrography under leg traction with 22.5 kg, intraarticular contrast material is undermining the femoral cartilage (arrow), clearly delineating a large cartilage delamination and subchondral bone marrow edema (*arrowheads*). Without leg traction, this delamination would have been hard to detect.

(Radiology 2016;280;2:351–369) ©RSNA 2016. All rights reserved. Printed with permission.

Hip Imaging in Athletes: Sports Imaging Series

The often nonspecific clinical presentation of athletes with hip/groin pain requires thorough evaluation of the hip joint itself on MRI as well as on the surrounding soft tissues which are equally important.

In an article published in the August issue of *Radiology* (*RSNA.org/Radiology*), Christoph A. Agten, MD, of Balgrist University Hospital in Zurich, Switzerland, and colleagues describe sports-related anatomy, biomechanics and pathology of the hip joint with special focus on MRI.

Essentials from the article include:

- Knowledge of hip biomechanics helps in the understanding of sports-related hip disease.
- In athletes, labral tears are common findings that are often asymptomatic.
- In athletes with hip pain, periarticular structures need to be imaged because many abnormalities occur outside the hip joint.

"The high prevalence of 'pathologic' findings in asymptomatic athletes mandates the need of close communication between radiologists and the referring clinical colleagues," the authors write.

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

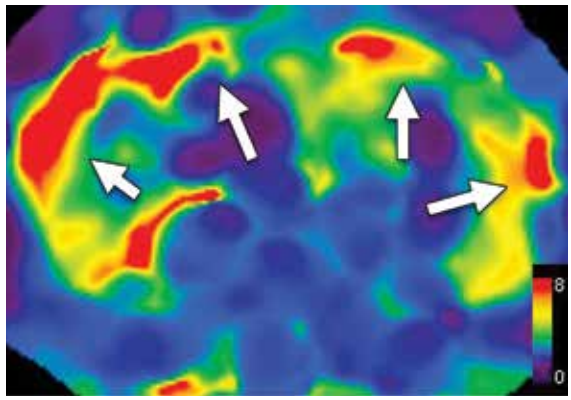
Imaging Findings of Congestive Hepatopathy

Recognition of congestive hepatopathy (CH) at imaging is critical because advanced liver fibrosis may develop before the condition is suspected clinically. CH refers to hepatic abnormalities that result from passive hepatic venous congestion.

In an article published in the July–August issue of *RadioGraphics* (*RSNA.org/RadioGraphics*), Michael L. Wells, MD, from the Mayo Clinic in Rochester, Minn., and colleagues explain that to facilitate appropriate workup and treatment, radiologists should be familiar with findings suggestive of CH at radiography, ultrasonography, CT, MRI and MR elastography.

CH is characterized by diverse clinical, hemodynamic and histologic manifestations that vary with the temporal course of the underlying cardiac dysfunction. CH manifests with many imaging findings, the most common of which include dilated hepatic veins and heterogeneous parenchymal enhancement.

"Hepatic injury in patients with CH can be clinically insidious and is potentially reversible if detected early. Awareness of this condition by radiologists can facilitate early diagnosis and treatment," the authors write.



Congestive hepatopathy (CH) in a patient with asplenia and complex congenital heart disease who underwent a Fontan operation 27 years earlier. CT and MRI showed findings consistent with CH. MR elastogram shows elevated liver stiffness primarily in the periphery of the liver (*arrows*), with a mean stiffness of 5.6 kPa

(RadioGraphics 2016;36;1024–1037) ©RSNA, 2016. All rights reserved. Printed with permission.

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


Radiology EXTRA PODCASTS

Listen to *Radiology* Editor Herbert Y. Kressel, MD, deputy editors and authors discuss the following articles in the June issue of *Radiology* at *RSNA.org/Radiology-Podcasts.*

- "Comparison of Clinical and Automated Breast Density Measurements: Implications for Risk Prediction and Supplemental Screening," Kathleen R. Brandt, MD, and colleagues.
- "Potential Utility of a Combined Approach with US and MR Arthrography to Image Medial Elbow Pain in Baseball Players," Johannes B. Roedl, MD, PhD, and colleagues.
- "Analysis of Workflow and Time to Treatment and the Effects on Outcome in Endovascular Treatment of Acute Ischemic Stroke: Results from the SWIFT PRIME Randomized Controlled Trial," Mayank Goyal, MD, FRCPC, and colleagues.

Education and Funding Opportunities

Register Now for RSNA Faculty Skills Update Workshop

September 13
Sheraton Chicago
O'Hare Airport Hotel

Don't miss the chance to participate in the 2016 RSNA Faculty Skills Update Workshop — a one-day meeting designed to provide instruction on lecture and presentation skills, as well as developing quality question-writing strategies.

The workshop will be led by physician faculty George S. Bisset III, MD, David J. DiSantis, MD, Harprit S. Bedi, MD, and Mahesh Thapa, MD. Attendees will explore how adults — especially physicians — learn best, and will offer best-practice methodologies for question writing.

At the conclusion of the workshop, participants will be able to:

- Apply adult learning theories to educational programs to increase learner engagement.
- Identify techniques for incorporating mobile devices and online resources into various radiology learning environments.
- Apply basic and advanced techniques for creation of radiology-specific PowerPoint presentations.
- Develop individual presentation skills.
- Create effective questions for teaching, continuing medical education assessment and board examination settings.

This live activity has been approved for *AMA PRA Category 1 Credits™*. The workshop fee is $175. For more information, go to *RSNA.org/Faculty-Skills-Update* or contact Andrea Faikus at *afaikus@rsna.org* or 1-630-590-7737.

RSNA® 2016

NIH Grantsmanship and Study Section Reviewers' Workshops

Saturday, Nov. 27, 1–5 p.m.
McCormick Place, Chicago

The NIH Grantsmanship Workshop introduces participants to the process of preparing a competitive research or training grant application. Designed for junior faculty in academic centers who wish to pursue a career in radiologic research, this didactic workshop is led by a faculty of leading researchers with extensive experience in the grant application process.

The RSNA/ARR Study Section Reviewers Workshop, "What It Takes to Be an Expert Reviewer for the NIH: The Peer Review Process Demystified," prepares potential reviewers and grant authors with an overview of grant mechanisms, evaluation criteria and the skills needed to become a study section reviewer. The workshop provides insight into the reviewers' perspective, which may be helpful when responding to grant reviews. Each workshop features a mock study section.

Workshop attendees must be registered for the RSNA annual meeting. Add the workshop to myAgenda at *Meeting.RSNA.org.*

For more information on these programs, go to *RSNA.org/ResearchCourses.* Direct questions to Rachel Nelson at 1-630-368-3742 or *rnelson@rsna.org.*

Annual Meeting Watch

News about RSNA 2016

Advance Registration and Housing is Now Open
Register online at *RSNA.org/Register.*

Registration Fees - On or Before Nov. 4 – fees increase $150 after Nov. 4 for most categories

ANNUAL + VIRTUAL MEETING PACKAGE *	ANNUAL MEETING ONLY	VIRTUAL MEETING ONLY	
$100	**Free**	**$100**	RSNA/AAPM Member
$25	**Free**	**$25**	RSNA Member-in-Training, RSNA Student Member
$300	**Free**	**$300**	Non-Member Student
$500	**$200**	**$300**	Non-Member Resident/Trainee
$500	**$200**	**$300**	Radiology Support Personnel
$1200	**$900**	**$300**	Non-Member Physician/Physicist
$1200	**$900**	**$300**	Hospital or Facility Executive and Industry Personnel
$625	**$325**	**$300**	One-day Technical Exhibits Only

RSNA® 2016

Important Dates for RSNA 2016

July 27	RSNA Online Program Opens
Oct. 1	Deadline for Badge Mailing*
Nov. 4	Final Discounted Registration Fee and Housing Deadline at 5 p.m. Central Time (CT)
Nov. 5	Increased Registration Fee Applied, $150 for most categories
Nov. 27 – Dec 2	102nd Scientific Assembly & Annual Meeting
Dec 23	Virtual Meeting closes

* NEW FOR 2016 **Badge materials will be mailed to all professional attendees registered by Oct. 1. For registrations processed after Oct. 1, badges will be available for pickup at McCormick Place**

*Register for the RSNA Annual + Virtual Meeting Package and get access to both the physical meeting at McCormick Place and the Virtual Meeting. This package gives you the maximum flexibility by providing access to selected live-streamed and on-demand sessions, scientific presentations, education exhibits and Cases of the Day. The meeting is available on demand until Dec. 23 at 4 p.m. CT.

For more information about registering for RSNA 2016, visit *RSNA.org/Register,* email *reginfo@rsna.org*, or call 1-800-381-6660 or 1-630-571-2670 x7862.

RSNA Gears up for 2016 Technical Exhibits

As the world's largest exhibition of radiology-related products, RSNA 2016 Technical Exhibits will feature **nearly 700 exhibitors** from across the globe showcasing products of all kinds in every specialty. Shop and compare equipment supplies, devices and software exhibited by leading manufacturers, suppliers and developers of medical information technology — all under one roof. Highlights include:

- **NEW** — *Live ultrasound scanning:* Companies will conduct ultrasound scanning on human models to demonstrate their products in real-time.
- **NEW** — *First-Time Exhibitor Pavilion:* Explore new products and services enhancing the field of radiology.
- *International Pavilions:* Visit exhibitors from Canada, China, France, Germany, Korea and The Netherlands.
- *Publishers Row:* Shop for educational publications covering all areas of medical imaging.
- *IHE Image Sharing Showcase*
- *Vendor Workshops:* Get hands-on tutorials on vendor software systems.

Go to *Meeting.RSNA.org* and search the list of exhibitors and floor plan to find the companies you want to visit.

Book Your Room Today

The three official housing providers for RSNA are Experient, E.S.A. Voyages and ACE Marketing; no other companies are authorized by RSNA. Do not risk your credit card or hotel reservation — unauthorized hotel solicitors may result in unfortunate and expensive consequences.

Reserve your hotel room with RSNA's official housing partners:

- Experient is the official housing partner for individuals registering for the RSNA annual meeting. For more information visit *RSNA.org/Register* or email *reginfo@rsna.org.*
- E.S.A. Voyages is the official international travel partner for groups, providing a variety of international travel packages including airfare and hotel. For more information, contact *esa@esavoyages.fr.*
- ACE is the official travel partner for groups coming from China and Taiwan, providing travel and hotel packages. For more information, contact *stephaniezhu@acemarketing.com.cn.*

Direct your housing questions to *housing@rsna.org,* or 1-630-571-7847

Secure your reservations early for the best selection and access to these great benefits:

- *Discounted Rates:* More than 90 Chicago hotels offer varying price points to meet your budget.
- *Flexible Booking Terms:* We offer a 72-hour cancellation policy.
- *Real-time Reservations:* Book now and receive an immediate confirmation.
- *Customer Service:* RSNA works on your behalf to resolve hotel disputes and assist with housing questions or concerns.
- *Support RSNA:* Booking through RSNA allows the Society to negotiate the best deals for you.
- *Free Transportation:* Shuttle bus and Metra train service between all RSNA-contracted hotels and McCormick Place is free.

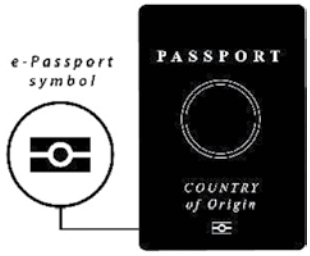
Change in Policy for Visa Waiver Program

International travelers should be aware of a change in policy regarding the Visa Waiver Program (VWP). Travelers in the categories below are no longer eligible to travel or be admitted to the United States under the VWP. For more information, go to *cbp.gov/travel/international-visitors/visa-waiver-program.*

- Nationals of VWP countries who have traveled to or been present in Iran, Iraq, Libya, Somalia, Sudan, Syria or Yemen on or after March 1, 2011.
- Nationals of VWP countries who are also nationals of Iran, Iraq, Libya, Somalia, Sudan, Syria, or Yemen.

These individuals will still be able to apply for a visa using the regular appointment process at a U.S. Embassy or Consulate.

Additionally, as of April 1, 2016, travelers using the VWP must have an e-Passport, which includes an embedded electronic chip. An e-Passport has a unique symbol on the cover (See right).



Annual Meeting Watch

Save Up to 10 Percent Through Exclusive Airfare Discounts

United Airlines offers discounts from 2 percent to 10 percent off applicable fares. Discounts apply on United 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, enter offer code *ZVQ6520692*, or call United at 1-800-426-1122 and provide the offer code. Service fee applies for phone reservations.

Delta offers special discounts off most fares; applicable restrictions may apply. Discounts are applicable to U.S./Canada originating passengers. Book online at Delta.com and enter Meeting Event Code NMNG3, or call Delta at 1-800-328-1111 and provide the event code. Service fee applies for phone reservations.

Experience RSNA 2016 through the Virtual Meeting

Register for the RSNA 2016 Virtual Meeting, now featuring 25 percent more content, extended access, CME credit for live sessions — plus a select number of CME-eligible courses on demand. Select Virtual Meeting on-demand courses quality for CME credit upon completion of a test and course evaluation. All live-viewed Virtual Meeting courses qualify for CME with a completed evaluation. Enjoy all this content, plus Cases of the Day, scientific presentations and education exhibits. Visit *RSNA.org/Virtual* for more information.

Virtual RSNA 2016

Bistro RSNA

Offering an all-inclusive buffet lunch, Bistro RSNA will be open Sunday, Nov. 27, through Thursday, Dec. 1, from 11 a.m. to 2:30 p.m. The Bistros are located in Technical Exhibits (North & South Buildings), and in the Learning Center, Lakeside Center (East Building).

**Learning Center location only on Dec. 1.*

Bistro RSNA

5k Fun Run

6:30 a.m., Tuesday, Nov. 29
Arvey Field, South Grant Park, Chicago

5k FUN RUN

Join the RSNA 2016 5k Fun Run and support radiology research and education with proceeds benefiting the RSNA Research & Education (R&E) Foundation. Whether you run, jog or walk, enjoy an outing for a good cause and network with your colleagues along Chicago's beautiful Lake Michigan shoreline.

Your fully tax-deductible donation benefits the RSNA R&E Foundation. Participants receive a commemorative T-shirt, while supplies last. Sign up during meeting registration at *RSNA.org/Register.*

Please note, in case of inclement weather, the Fun Run may be canceled. All Fun Run fees are non-refundable and non-transferable.

RSNA.org

New Release: Modules on Comparative Effectiveness Research (CER)

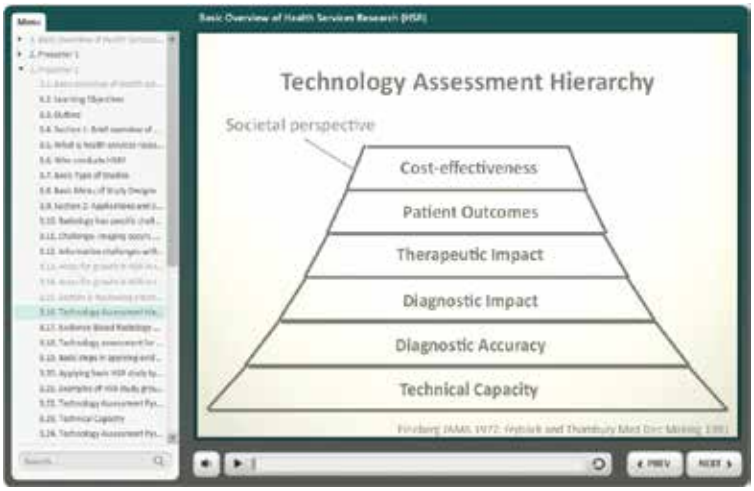
Several comparative effectiveness research (CER) modules were recently launched at *RSNA.org/Library*. Developed by Brian W. Bresnahan, PhD, a Philips Healthcare/RSNA Education Scholar Grant recipient, the free modules offer *AMA PRA Category 1 Credit*™ for MOC programs participants.

The modules introduce the world of CER and provide a solid foundation for evaluating diagnostic imaging interventions and their value in comparison to patient outcomes and financial expenditures. Written by CER subject matter experts, the modules were reviewed by the Comparative Effectiveness Research Training Committee (CERT).

Each module contains an audio presentation along with a slide presentation. Users can locate terms through a built-in search feature and can use automatic bookmarking to return to the last viewed slide.

A CME test concludes each module. Participants must earn an 80 percent or better score to earn CME credit, but tests can be retaken.

Access the CER modules at *RSNA.org/Library*. Additional modules will be added in coming months, so check back frequently.



Modules on comparative effectiveness research provide a solid foundational overview of concepts related to health services research and health economics.

Value of Membership

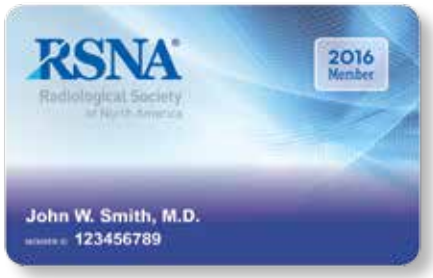
Automatic Renewal Option Makes Renewing Your Membership Easy

Members can sign up for automatic renewal, a convenient feature that allows RSNA to charge a designated credit card for annual membership dues.

When you renew your membership for 2017, you can sign up for automatic membership renewal at the same time. 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 printed membership invoice.

Each October, 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.

For more information, go to *RSNA.org/Membership*.



COMING NEXT MONTH

Next month, read a preview of the RSNA 2016 Country Presents sessions spotlighting the latest radiology from the Netherlands and Turkey.

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