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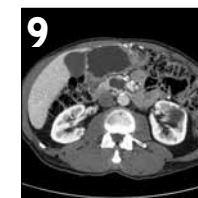
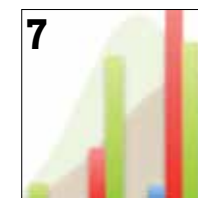
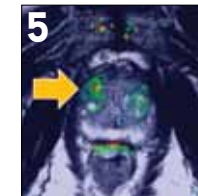
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OI RO GU OB
PELVIC IMAGING FOLLOWING THERAPY FOR MALIGNANCY

GI VI
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FEMALE INFERTILITY

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2012 RSNA Membership Renewal Under Way

RSNA MEMBERSHIP RENEWAL for 2011 is under way online and by e-mail or phone. To use myRSNA® to pay your membership dues online, click “myRSNA” at the top of the RSNA.org homepage or go to myRSNA.org. After logging into myRSNA, click Membership Renewal in the My Profile section. Before beginning the renewal process, take a moment to update your profile with current contact information and save your changes.

All RSNA members have access to RSNA journals online. Because online access to *Radiology* and *RadioGraphics* is tied to membership status, if your payment has not been received by December 31, 2011, your online subscriptions will be automatically inactivated.

Practices can take advantage of RSNA's group billing option. For more information on the option and/or to renew membership by phone, contact the RSNA Membership Department toll-free at 1-877-RSNA-MEM or at 1-630-571-7873, or send an e-mail to membership@rsna.org.

2011 INTERNATIONAL YOUNG ACADEMICS NAMED

The RSNA Committee on International Relations and Education (CIRE) received more than 50 applications for the 2011 Introduction to Research for International Young Academics (IRIYA) Program. Selected participants will attend a specially designed four-day program, held during the RSNA annual meeting, that encourages them to pursue careers in academic radiology. The following candidates were selected to participate in this year's IRIYA Program:

NAME	COUNTRY
Sung Soo Ahn, M.D.	Korea
Leticia Borrino, M.D.	Argentina
Chiara Carducci, M.D.	Italy
Rajat Chowdhury, B.M., B.Ch.	UK/England
Idoia Corcuera Solano, M.D.	Spain
Vicci du Plessis, M.B., Ch.B.	South Africa
Ajit Goenka, M.D.	India
Darragh Halpenny, M.D.	Ireland
Mami Iima, M.D.	Japan
Nasreen Mahomed, M.B., B.Ch.	South Africa
Achille Mileto, M.D.	Italy
Peter Muganga, M.B., Ch.B.	Uganda
Patrick Omoumi, M.D.	Belgium
Temitope Soyemi, M.D.	Nigeria
Elcin Zan, M.D.	Turkey
Jorge Eugenio Martinez Garcia, M.D.	Mexico FMRI (Selected by the Mexican Federation of Radiology and Imaging)
Raul Gamez Sala, M.D.	Mexico SMRI (Selected by the Mexican Society of Radiology and Imaging)

Numbers in the News

5

Number of academic institutions hosting the RSNA Image Share Network. See Page 13 to read more about the project, funded through a contract with National Institute of Biomedical Imaging and Bioengineering to build a secure, patient-centric medical imaging sharing network based on common open-standards architecture.

40

Percentage of imaging exams, analyzed in a recent study, showing at least one incidental finding. Just 6 percent of patients with incidental findings received follow-up medical treatment and less than 1 percent of those treated gained any clear benefit. See Page 9 to learn how some physicians are calling for a standard approach to managing incidental findings.

55

Estimated percentage of the population of India that is poor, according to poverty indices. Learn how radiology is part of efforts to end imbalances in Indian healthcare, including access to imaging services in urban versus rural areas, on Page 11.

933

Number of RSNA-related news stories carried in media outlets in July. Read about one study receiving considerable coverage, “Swedish Two-County Trial: Impact of Mammographic Screening on Breast Cancer Mortality During 3 Decades,” on Page 17.

Garcia Named Radiology Chair at Virginia Tech
Evelyn Garcia, M.D., is chair of the Department of Radiology at the Virginia Tech Carilion School of Medicine in Roanoke. Dr. Garcia, an assistant professor of radiology at the school, also serves as chair and medical director for the Department of Radiology at Carilion Clinic.



2012 R&E GRANT APPLICATION PROCESS OPENS NEXT MONTH

Individuals interested in obtaining RSNA Research & Education (R&E) Foundation grants for 2012 can submit their applications starting in October. For more information, go to RSNA.org/Foundation or contact Scott A. Walter, M.S., Assistant Director, Grant Administration at 1-630-571-7816 or swalter@rsna.org.

Grant Programs

The R&E Foundation offers funding opportunities for medical students, trainees and faculty, with grants up to \$150,000. Research and education grants cover a virtually limitless spectrum of projects, from traditional hypothesis-driven basic science and clinical investigations to topics such as drug, therapy and device development, informatics, comparative effectiveness and cost-effectiveness, quality improvement, ethics and professionalism and evidence-based radiology.

EDUCATION GRANTS

Deadline—Jan 10

Education Scholar Grant: For individuals with an active interest in any area of radiologic education. Provides salary support and educational expenses. Open to international applicants.

RSNA/AUR/APDR/SCARD Radiology Education Research Development Grant:

Provides one-year project opportunities for individuals seeking to advance the science of radiologic education. Open to international applicants.

“The RSNA Education Scholar Grant was key in my own education in the science of quality improvement, and in moving the registry forward, enabling significant progress to be made in this critical patient safety area.”



Marilyn J. Goske, M.D., “Developing a ‘Best Practice’ National Registry for CT Scans in Children”
(2009–2011 Derek Harwood-Nash/Harvey and Jean Picker Education Scholar Grant)

▶ 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.

RESEARCH GRANTS

Deadline—Jan 15

Research Scholar Grant: For junior faculty members who have completed conventional resident/fellowship training programs but have not yet been recognized as independent investigators. Provides salary support for two years.

Research Seed Grant: Enables investigators throughout the world to gain experience in defining objectives and testing hypotheses in preparation for major grant applications to corporations, foundations and governmental agencies. Supports the preliminary or pilot phase of scientific projects. Open to international applicants.

“The R&E peer-review process is competitive, but it is an excellent training ground for NIH grant writing. The grants provide the much needed research money to execute your vision early in your career, strengthen your CV and provide a good reason to celebrate with your research teammates.”



An Tang, M.D., “Randomized Trial of Liraglutide and Insulin Therapy on Hepatic Steatosis as Measured by MRI and MRS in Metformin-treated Patients with Type 2 Diabetes: an Open Pilot Study”
(2011 Toshiba America Medical Systems/RSNA Research Seed Grant)

Research Resident/Fellow Grant: Gives young investigators who are not yet professionally established in the radiologic sciences an opportunity to develop competence in research techniques and methods. To be used for salary and/or non-personnel research expenses.

RESEARCH MEDICAL STUDENT GRANT

Deadline—Feb 1

Makes radiology research opportunities possible for medical students and encourages them early in their medical careers to consider academic radiology as an option for their future. Provides stipend for students to complete 10-12 week research projects.

“The RSNA medical student research grant provided an opportunity for me to not only learn about advanced imaging techniques, post-processing and application to patient care, but also to grasp a broader understanding of medical research.”



Joanna Jeong, M.S., “Rapid Automated Corpus Callosum Magnetization Transfer Ratio and Morphometrics at 3T: Multiple Sclerosis Assessment”
(2010 Research Medical Student Grant)



Diagnostic Imaging Medical Physics Residency Training Programs: The need is great, the time is now—a letter to the leaders in radiology.

THE LEADERSHIP OF RSNA and the American Association of Physicists in Medicine (AAPM) ask for your support in creating accredited residencies for medical physicists practicing in clinical imaging. With advanced imaging technology more prevalent in clinical practice and patient safety paramount, oversight of acquisition protocols, image quality, and dose assessment is crucial for reducing the risk to and enhancing the safety of the patient. We believe, and accreditation bodies also recognize that, the “Qualified Medical Physicist (QMP)” must be directly involved in the critical image quality and dose assessments of the technology. We are also fast approaching the time (2014) at which becoming a QMP will require completion of an accredited two-year residency. This is a requirement of the American Board of Radiology.

While there are a number of graduate programs (Ph.D. and M.S. levels) producing graduates with training in diagnostic imaging physics, there are currently only six diagnostic imaging Medical Physics residencies in North America producing about seven residency graduates per year. According to a recent manpower assessment commissioned by the AAPM, at least 30 diagnostic imaging physicists per year will be needed to meet current and future demands beyond 2014. Clearly, additional residency programs and positions are needed immediately.

Therefore, the AAPM and the RSNA are committing support for the establishment of accredited residencies, including financial grants to initiate the required self-study, and monetary assistance in building the elements of a residency program. Informational resources are available from the AAPM and the Commission on

Accreditation of Medical Physics Education Programs (CAM-PEP). We can provide descriptions of existing residencies, their self-study documentation, and business models that have been effective in maintaining existing programs.

By working together and bringing attention to these issues, we are hopeful that several imaging physics residencies will soon be established and producing a sufficient number of board-eligible individuals to meet the projected needs. Success will depend on the support and assistance of the leaders in radiology. Please contact us with any questions and for information regarding residency program details and supporting programs.

Thanks very much for your consideration.

J. ANTHONY SEIBERT, PH.D.
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Meeting Program to be Dedicated to Newton

RSNA will dedicate its 2011 RSNA Meeting Program to the memory of neuroradiology pioneer **T. Hans Newton, M.D.** Dr. Newton died in June 2010 at the age of 85.

Dr. Newton was known for founding the neuroradiology section at the University of California, San Francisco, and raising the institution's profile as a cutting-edge, world-class radiology neuroradiology center. He wrote numerous seminal articles on arteriography and co-authored with Gordon Potts, M.D., the multivolume

Radiology of the Skull and Brain, known as the “Red Bible” of neuroradiology. Dr. Newton was one of 14 founding members of the American Society of Neuroradiology and had been a member of RSNA since 1970.



Frey to be ABR Associate Executive Director for Medical Physics

The American Board of Radiology (ABR) appointed **G. Donald Frey, Ph.D.**, its associate executive director for medical physics effective January 2012. Dr. Frey, a professor of radiology for the Medical University of South Carolina in Charleston, has served as an ABR examiner since 1996 and is currently a member of the American Association of Physicists in Medicine (AAPM) Medical Physics Exam Committee and the Physics Maintenance of Certification Committee. A former RSNA vice-president, Dr. Frey has served as the AAPM liaison for the RSNA Education Council and is a current member of RSNA's Public Information Advisors Network (PIAN). He serves as a reviewer for *Radiology* and *RadioGraphics*.



My Turn

There's an App for...Us!

With more than 420,000 apps available at Apple's App Store, and the Android Market ramping up, it was only a matter of time before RSNA members got their tablet option for reading *RSNA News*. But a lot of thought and effort has gone into avoiding the trap of creating a generic adaptation of one reading experience into a different form that is no better, just more gimmicky. I hope you're pleasantly surprised by what you find.

We've only just started, but already our tablet version is quite sophisticated. With videos, slide shows and other embedded content, we're now able to provide depth to what used to only be a two-dimensional medium. And more is yet to come, as software improvements bring new features that will allow us to further enhance your reading experience.

The first thing you'll notice as you navigate through the tablet version of *RSNA News* is that it is no longer a linear experience. Scrolling through at first, you may even lose your sense of where

you are. As you become familiar with the signposts that help you keep your way and guide you to additional content, navigating will begin to feel more natural.



For those of you whose medical practices have transitioned from paper charts to electronic health records, the experience will feel all too familiar—it's awkward at first, but afterwards there's no going back.

In my opinion, the tablet version of a magazine combines the best of both worlds. For those who like to hold something in their hands, and I am among them, there's still something to hold, albeit a bit heavier than paper. For those who love the freedom of getting informed electronically, the tablet version provides not only multimedia content, but also the potential in the near future to be a portal out to the “real” world of the Internet – to exchange content with family and friends, dig deeper into a topic of interest, and connect with your calendars and other personal programs.

All of us at *RSNA News* are excited by the possibilities that this new medium offers and we welcome your feedback (email us at tellus@rsna.org). You can help us stay ahead of the curve, keep us relevant and distinguish us from being just another App.

Download Free RSNA News Tablet App
Users of tablet PCs can now download the *RSNA News* app by searching “RSNA News” on the Android Market or App Store, or going directly to the following URLs:

- Android Market: market.android.com/details?id=air.org.rsna.rsnanews
- iTunes: itunes.apple.com/us/app/rsna-news/id444083170?mt=8&ls=1

David M. Hovsepian, M.D., is the editor of *RSNA News*. He is a professor of radiology and chief quality and safety officer for the Department of Radiology at Stanford University in California. Dr. Hovsepian also serves on the RSNA Quality Improvement Committee, the Structured Reporting Subcommittee of the RSNA Radiology Informatics Committee, the Public Information Committee and the Public Information Advisors Network.

FDA Seeks Input on Medical App Oversight

THE U.S. Food and Drug Administration (FDA) is seeking input on its proposed approach to oversee mobile medical apps. The FDA intends to encourage the development of new apps, focus only on a select group of apps, and not regulate the sale or general consumer use of smartphones or tablets.

In announcing its interest in mobile app development and use, the FDA cited research from the firm research2guidance, which estimates that 500 million smartphone users worldwide will be using a healthcare application by 2015.

“The use of mobile medical apps on smartphones and tablets is revolutionizing healthcare delivery,” said Jeffrey Shuren, M.D., J.D., director of the FDA's Center for Devices and Radiological Health. “Our draft approach calls for oversight of only those mobile medical apps that present the greatest risk to patients when they don't

work as intended.”

The FDA's draft guidance defines a small subset of apps “that impact or may impact the performance or functionality of currently regulated medical devices.” Of particular relevance to radiology is the inclusion of apps that “are used as an accessory to medical device already regulated by the FDA”—for example, apps that allow physicians to make diagnoses by viewing medical images from PACS on a smartphone or a mobile tablet.

Also included are apps that transform

a mobile communications device into a regulated medical device by using attachments, sensors or other devices, such as those that turn a smartphone into an ECG machine.

To read the draft guidance and offer feedback, go to www.fda.gov/MedicalDevices/DeviceRegulationandGuidance/GuidanceDocuments/ucm263280.htm.



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Fusion Imaging Could Revolutionize Prostate Biopsies

New technology fusing MR imaging with 3D ultrasound could soon replace current standards for prostatic biopsy and could impact prostate care beyond that, according to new research from the University of California, Los Angeles (UCLA).

THE PRESENT STANDARD—systematic biopsy—uses ultrasound guidance to remove multiple cores from the prostate for examination. Such biopsies are often described as “blind” because they don’t take into account the specific location of abnormal tissue within the prostate.

“With the systematic approach, the urologist uses ultrasound only to identify the location of the prostate, but not other areas that look suspicious,” said researcher Daniel Margolis, M.D., an assistant professor of radiology and co-director of prostate MR imaging at the UCLA David Geffen School of Medicine. “MR imaging can locate abnormalities within the prostate before a biopsy.”

The new method, called targeted biopsy, concentrates on obtaining specimens from the most suspicious areas in the prostate.

“Definitely within a decade, the idea of doing blind biopsies will fall out of favor,” said Dr. Margolis, who presented the research along with UCLA colleagues at the May 2011 International Society for Magnetic Resonance in Medicine (ISMRM) annual meeting in Montreal. “Targeted biopsies are more advantageous because they not only better select who should be biopsied, but also guide where the biopsies are to be taken.”

Targeted Biopsy Produces Higher Yield

In the ISMRM study, Dr. Margolis and colleagues examined 54 patients with abnormal prostates and abnormal levels of prostate-specific antigen (PSA) in the blood. Patients underwent multiparametric MR imaging—a combination of diffusion-weighted, dynamic contrast-enhanced and traditional T2-weighted MR imaging.

Transrectal biopsies were performed using a 3D tracking device called Artemis™ that employs proprietary MR/ultrasound-fusion software designed by California-based Eigen.

“Artemis is a physical device that connects to a standard ultrasound machine and contains the software for needle tracking and 3D imaging,” said researcher Shyam Natarajan, M.S., a biomedical engineering Ph.D. candidate at UCLA’s Center for Advanced Surgical and Interventional Technology. “The device tracks the position of the transducer



Margolis



Natarajan

in real-time via a tracking arm, and processes the ultrasound input. MR imaging is independent from the whole process and any combination of protocols could theoretically be used.”

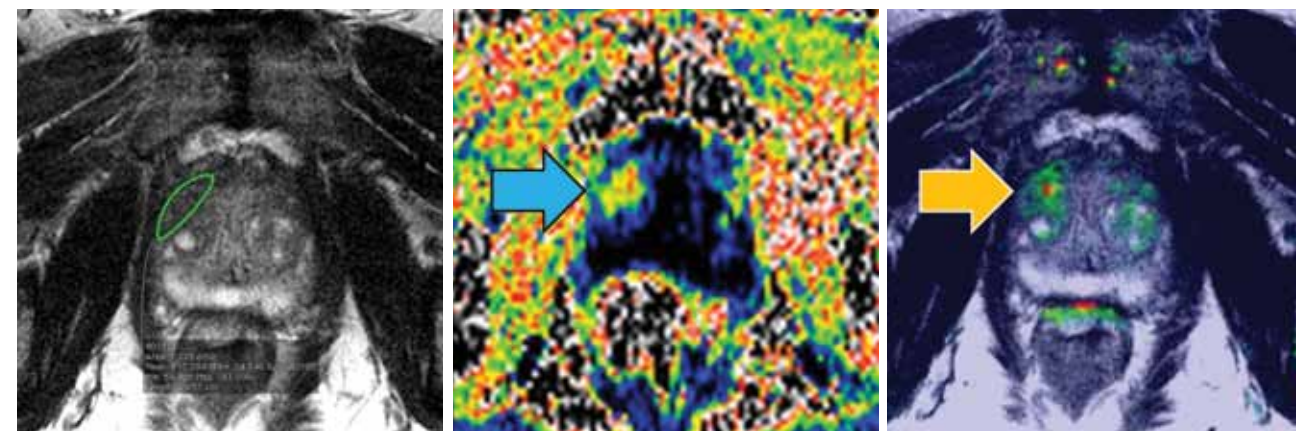
Multiparametric MR imaging identified 86 suspicious targets in 49 patients; the urologist biopsied 61 of the targets on the basis of a high probability of cancer.

When parallax imaging was added, 37 percent of the targeted biopsy samples tested positive for cancer, compared with only 7.1 percent of the systematic biopsy samples.

“These data are preliminary but very promising,” Dr. Margolis said. “In no case did we find cancer

“The most important implication for the use of MR imaging was that there were no significant cancers in patients with negative MR imaging on targeted biopsy.”

Daniel Margolis, M.D.



Targeted biopsy—an exacting method of obtaining biopsy specimens from suspicious areas in the prostate—could revolutionize prostate cancer care, according to researchers.

Top left: T2-axial 3-dimensional acquisition turbo spin-echo image (SPACE, Siemens Medical Systems) showing the target area, identified based on T2-weighted imaging and functional (diffusion and perfusion) characteristics, delineated for targeting. The target and prostate are contoured on adjacent slices to generate a volume. Skipped slices are interpolated; center: apparent diffusion coefficient colorized to highlight focally restricted diffusion; right: a color perfusion map overlaid on the corresponding axial T2-weighted image. In this case, the map is generated from the early enhancement subtraction image. Areas of suspicious perfusion based on early or intense peak enhancement are further evaluated with time-intensity curves.

Images courtesy of Daniel Margolis, M.D.

on systematic biopsies that wasn’t found on targeted biopsy, if that cancer was significant. In some cases, systematic biopsy detected cancer that was not found on the targeted biopsy, but in all those cases, the cancer was small volume, making the patients candidates for surveillance.”

“The most important implication for the use of MR imaging was that there were no significant cancers in patients with negative MR imaging on targeted biopsy,” he added.

Fusion Method Holds Promise beyond Biopsy

In a related study published in the May issue of *Urologic Oncology*, Margolis and UCLA researchers evaluated the 3D tracking and targeting device in 218 men undergoing first and follow-up biopsies to rule out prostate cancer.

After the subjects underwent conventional transrectal ultrasound, researchers attached the tracking system to the ultrasound probe, scanned the prostate and created a 3D reconstruction. In 47 of the men, multiparametric MR imaging was performed in advance of the transrectal ultrasound, allowing physicians to fuse the stored MR images with real-time ultrasound during biopsy.

Results echoed findings revealed in the ISMRM research. One-third of suspicious lesions targeted by MR imaging tested positive for cancer compared with 7 percent of the non-targeted lesions.

Findings point to an expanded role for the ultrasound-MR imaging approach in the future, said Natarajan—also an author on the *Urologic Oncology* study. He predicts that the fusion method will impact prostate care beyond the biopsy stage.

“Alternatives to surgical treatment like active surveillance and focal therapy hinge on the ability to accurately target previously detected cancer,” he said. “If an accurate map of the cancer can be created after biopsy, then perhaps the problem of over-treatment will be solved with more appropriate management options.”

“In the past, patients under active surveillance had to return for a biopsy every year or two,” Dr. Margolis said. “We want to see if MR imaging can perform that surveillance.” □

WEB EXTRAS

New technology fuses MRI, ultrasound to achieve targeted biopsy of prostate cancer



To view a video of targeted biopsy fusing MR imaging with 3D ultrasound at the University of California, Los Angeles, go to rsnanews.RSNA.org.

For more information on the research cited in this study, go to rsnanews.RSNA.org.

PROSTATE MR THE FOCUS OF RSNA 2011 COURSE

“Prostate MR Imaging in 2011: Current Role in Staging and Surveillance” is a refresher course to be offered at RSNA 2011. Attendees will learn about prostate cancer care in the PSA screening era and the limitations of current therapeutic approaches, as well as the most current care guidelines. Also to be covered are the indications for prostate MR, specific scenarios where MR has been helpful in prostate cancer management and issues related to implementing MR in different health care systems. RSNA 2011 registration and course enrollment are under way at RSNA2011.RSNA.org.



fMRI May Improve Autism Diagnosis

Functional MR imaging (fMRI) may provide an early and objective indicator of autism, according to Columbia University researchers who used the technique to document language impairment in autistic children.

ALTHOUGH THE Centers for Disease Control reports that as many as one in every 110 children is affected by autism, no objective diagnosis exists for the disorder, said Joy Hirsch, Ph.D., a professor at Columbia University Medical Center in New York and director of the Functional MRI Laboratory, and lead researcher for the study published in the August issue of *Radiology*.

"Diagnosis is currently limited to parent and clinician observation of missed developmental milestones," Dr. Hirsch said. "Parents who receive a 'soft' diagnosis of autism based on behavioral symptoms often seek more concrete information. This is a group of parents who are very motivated to intervene on behalf of their children."

There is a critical need for an objective diagnosis of autism within the first few years—not only because so many children are affected, but because a biomarker of the disorder could facilitate early intervention.

"Some children can benefit from intensive behavior therapy, but it works best in periods of plasticity," Dr. Hirsch said. "Once a child has missed major developmental milestones, the plastic period for therapeutic intervention is past or diminished."

Difference Revealed in Neural Activity Patterns

Dr. Hirsch and colleagues used fMRI to measure the neural activity in the working tissues of autistic children. Researchers performed fMRI exams on 15 control children (mean age: 12.1) and 12 language-impaired and age-matched autistic children (mean age: 12.4) while the children listened to recordings of their parents talking to them.

During this passive stimulation, activation levels were measured within two regions of the brain: the primary auditory cortex (A1) and superior temporal gyrus (STG), a region associated with language comprehension. Brain activation maps for each patient were then computed using statistical linear modeling.

"Because these children were undergoing MR imaging to rule out organic disease, the 20 minutes added to perform the fMRI protocol was not difficult," said co-author Johanna Schwarzenberger, M.D., an associate professor of clinical anesthesia at the David Geffen School of Medicine at the University of California, Los Angeles.



Hirsch

Volkmar

Results of the fMRI revealed that activity in the A1 region of the brain did not differ between autistic and control patients. However, activation within the STG was greater for control children relative to autistic patients.

Functional MR imaging activation in response to passive language stimuli can help differentiate language-impaired autistic subjects from control children with 83 percent (10 of 12 subjects) specificity and 92 percent (14 of 15 subjects) sensitivity, the authors concluded.

"These findings first tell us that the autistic children in our study appeared normal with respect to the primary auditory system," Dr. Hirsch said. "It appears that the STG in the brains of autistic children was not as sensitive to the language narratives as was the STG in the brains of the typical children."

“This study suggests that fMRI acquired during listening to a language narrative can be used to distinguish children with autism from those without.”

Joy Hirsch, Ph.D.

An additional 27 autistic children undergoing routine MR imaging exams with sedation were also included in the study. Using a similar analysis of sedation-adjusted values from the control group, researchers identified 26 of 27 sedated autistic patients with autism.

"This study suggests that fMRI acquired during listening to a language narrative can be used to distinguish children with autism from those without," Dr. Hirsch said. "Based on these initial findings, future studies using these or similar fMRI methods may result in an early and objective imaging indicator for autism."

Research Gives Hope to Autism Community

While future research must address whether atypical activation patterns are specific to autism and if they would be also found in very young patients, Dr. Hirsch said this study points to the validity of the fMRI technique.

Expanding beyond paper-and-pencil diagnostic tests would be a welcome change for the autism community, she said.

"Anytime a child comes in for diagnostic tests for behavioral symptoms that are dissimilar to other children, parents have tremendous angst," Dr. Schwarzenberger said. "This study is a step in the right direction toward providing a tool for early detection of autism."

Such a test is important for parents who suspect something is amiss with their child and for defending the need for early intervention to insurance companies, she added.

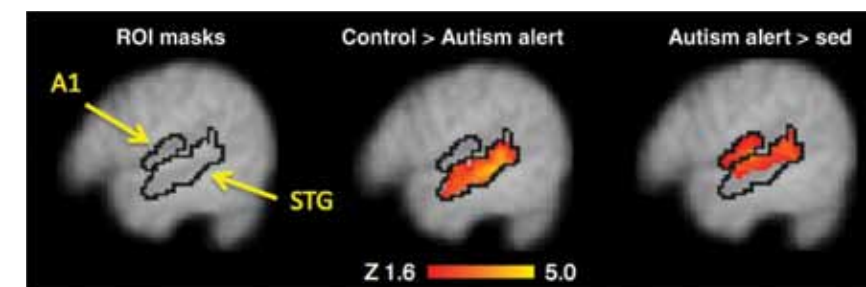
"With autism spectrum disorders, even more so than with other developmental disorders, the earlier the intervention the better," said Fred R. Volkmar, M.D., chief of psychiatry at Yale-New Haven Children's Hospital and chair of the Child Study Center. "Nevertheless, it is extremely difficult for even very experienced clinicians to diagnose children under one year of age because they have only a handful of discriminating behaviors."

A diagnostic tool such as fMRI would also be helpful for measuring an autistic child's response to drugs and other therapies, Dr. Volkmar said.

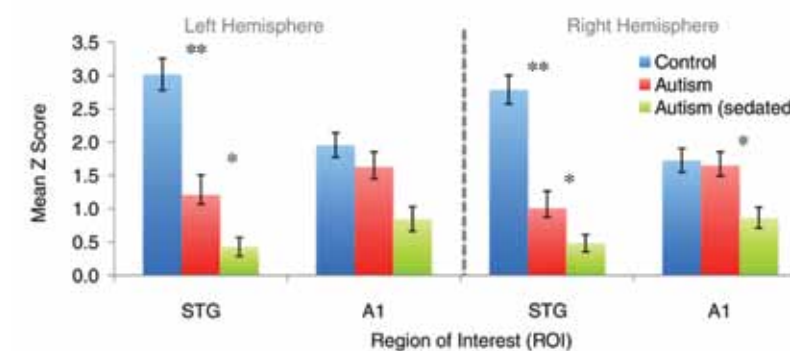
Future research and refinement of fMRI will determine whether neuroimaging will offer the early indicator of autism that will help both children on the spectrum and scientists studying the disorder. □

WEB EXTRAS

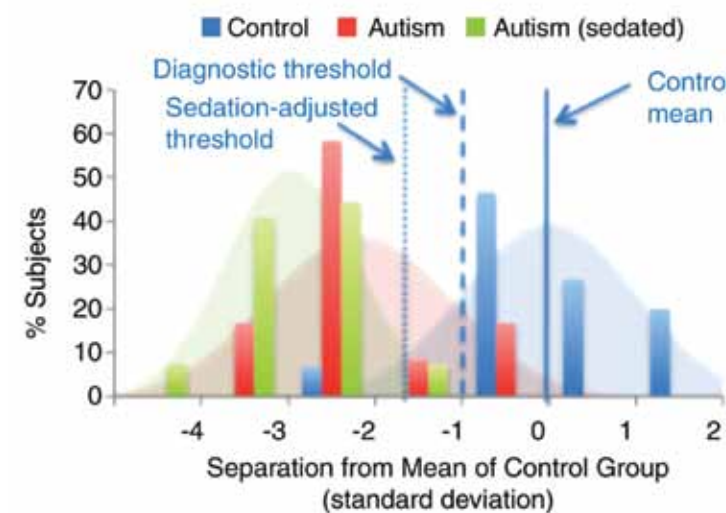
To access the *Radiology* study, "Speech Stimulation during Functional MR Imaging as a Potential Indicator of Autism," go to RSNA.org/radiology.



An MR image (left) illustrates anatomic regions of interest (ROI) for primary auditory cortex (A1) and superior temporal gyrus (STG). Activation maps (middle and right) demonstrate greater activity within STG, but not A1, in the control group compared with the nonsedated autism group (control > autism alert, middle image) and greater activation with both STG and A1 in nonsedated compared with sedated autistic subjects (autism alert > sed, right image; sed = sedated).



Bar chart shows amplitude of activation of individual subjects within ROIs (two-sample t tests; ** = P < .01, * = P < .05, with Bonferroni adjustment).



Graphs show the percentage of subjects whose values for amplitude fell within 1–3 standard deviations from the control mean (solid lines). The diagnostic threshold for nonsedated autistic subjects was set to 1 standard deviation below the control mean (dashed lines). A similar threshold was estimated for sedated autistic subjects on the basis of differences between nonsedated and sedated autistic subjects (dotted lines).

Standardization Critical to Managing Incidental Findings

Rapidly evolving technology combined with an increasing number of CT scans has created yet another imaging upswing: a marked increase in the number of “incidental findings.”

DESPITE THE sharp rise in these findings, there is little consistency in recognizing, reporting and managing such “incidentalomas,” as they are often called, primarily due to lack of guidelines for managing them. Because the vast majority of these findings have proven to be benign, patients are often subjected to unnecessary anxiety, costs and medical procedures. For the physician, legal, ethical and financial problems often follow.

Considering the rate imaging is moving on all fronts, a standard approach to managing incidental findings is critical, said Lincoln Berland, M.D., a professor emeritus and vice-chair for quality improvement and patient safety and chief of Body CT and the 3D Laboratory at the University of Alabama at Birmingham.

“The current approach to managing incidental findings varies from person to person, facility to facility and day to day for a given physician,” said Dr. Berland, who will moderate the RSNA 2011 Controversies session, “Can We Reduce Work-ups for Incidental Findings? Reporting, Cost and Medico-legal Issues.”

As a step toward standardizing the approach, Dr. Berland and colleagues authored the American College of Radiology’s (ACR) 2010 Incidental Findings Committee white paper on abdominal CT, which members hope will be widely applied. (See Web Extras).

“Anytime you improve consistency, you improve the quality of the process and outcomes,” Dr. Berland said. “The committee expects to refine and adapt these recommendations and to develop additional guidance for other types of incidental findings.”

Incidental Findings Create Common Quandary

Although relatively little research has been devoted to incidental findings, a study published in the September 2010 issue of the *Archives of Internal Medicine* sheds some new light on the issue.

Of the 1,426 research-oriented imaging exams performed between January and March 2004, at the Mayo Clinic, Rochester, Minn., 567—or nearly 40 percent—showed at least one incidental finding, the study showed. Just 35 of these 567 patients received follow-up medical treatment in the next three years and only six of the 35—less than 1 percent—gained any clear medical benefit from the intervention.

The numbers demonstrate the crux of the dilemma: While the findings potentially offer an early opportunity to diagnose a life-threatening disease, most are benign and open the door to invasive, costly and possibly unnecessary interventions.

One example of the latter comes from a physician who was also a patient. William Casarella, M.D., former chair of the Department of Radiology at Emory University in Atlanta, experienced firsthand the clinical drama that often follows diagnostic testing after undergoing a negative routine CT colonographic exam.

Follow-up CT colonography revealed no polyps but detected additional lung, liver and kidney abnormalities. Dr. Casarella underwent additional CT exams, a PET scan, a liver biopsy and video-aided thoracoscopy. While results were benign, the cascade of testing that followed was physically, emotionally and financially draining. Dr. Casarella, who detailed his experience in the September 2002 issue of *Radiology* (See Web Extras), paid more than \$50,000 in medical fees.

Regardless of the statistics, many physicians—and patients—will always take the “better safe than sorry” approach when it comes to incidental findings, Dr. Berland said.

“There is a culture within medicine that believes you have to be certain, that you can’t leave anything to chance,” he said. “I don’t think that culture would change even if all medicolegal concerns evaporated tomorrow.”

Guidelines Standardize Reporting, Follow-up

The goal of the ACR white paper was not necessarily to reduce utilization, but to optimize it, so that only the appropriate incidental findings are further evaluated, Dr. Berland said.

“The current approach to managing incidental findings varies from person to person, facility to facility and day to day for a given physician.”

Lincoln Berland, M.D.



Berland



Pancreatic cyst

Above, an incidentally discovered cystic pancreatic lesion, is another example included in the American College of Radiology (ACR) white paper on incidental findings. Diagnosing and managing these findings are based on size, internal features, symptoms and follow-up.



Small adrenal nodule

The flowchart and text in the ACR white paper on incidental findings describes how to manage lesions such as the small, incidental adrenal nodule pictured above, based on size, attenuation and enhancement features.

Developed with other radiology organizations, the document provides general guidance for managing incidentally discovered masses, acknowledging that individual care will vary depending on the patient, clinical environment, available resources and judgment of the physician.

The document is not part of the ACR Practice Guidelines and Technical Standards, which represents official ACR policy, and should not be used to establish the legal standard of care, said co-author William W. Mayo-Smith, M.D., a professor of radiology, Alpert Medical School, Brown University and director of CT and Body Imaging/Intervention at Rhode Island Hospital in Providence.

“I do not think incidental findings should be regulated per se, as the topic is too variable for specific regulations,” said Dr. Mayo-Smith. “There should, however, be an attempt to standardize our reporting and suggested follow-up.”

Among other objectives, the paper sought to develop a consensus on sets of organ-specific imaging features for some commonly affected organ systems within the abdomen and develop medically appropriate approaches to managing incidental findings that are diagnostically indeterminate.

The easy-to-reference format features boxed recommendations and flow charts for managing specific incidental findings detected on CT and/or MR.

“We’re hoping physicians will print out the flow charts and put them on bulletin boards to help simplify their approach,” Dr. Berland said. “We would like to see them widely disseminated.”

Radiologists can also reference the National Institute of Biomedical Imaging and Bioengineering (NIBIB) Points to Consider for Investigators: Incidental Findings in Imaging Research (See Web Extras). □

Radiology Organizations Contribute Incidental Findings Recommendations

The American College of Radiology (ACR), “Managing Incidental Findings on Abdominal CT: White Paper of the ACR Incidental Findings Committee,” was developed with participation from the Society of Computed Body Tomography and Magnetic Resonance, the Society of Gastrointestinal Radiologists and the Society of Uroradiology. For more information on the recommendations, go to rsnanews.RSNA.org.

WEB EXTRAS

☑ To download the PowerPoint, “The Abdominal Incidentaloma—What to Report for the Hepatic, Pancreatic, Adrenal and Renal Incidentalomas,” and for more information on the research cited in this article, go to rsnanews.RSNA.org.

☑ To access an abstract of, “Managing Incidental Findings on Abdominal CT: White Paper of the ACR Incidental Findings Committee,” by Lincoln Berland, M.D., and for more information on the research cited in this article, go to rsnanews.RSNA.org.

INCIDENTAL FINDINGS FOCUS OF CONTROVERSIES SESSION

Moderated by Lincoln Berland, M.D., the Controversies session, “Can We Reduce Work-ups for Incidental Findings? Reporting, Cost, and Medico-legal Issues,” will be held Wednesday, November 30 at RSNA 2011.

Learning objectives of the session are:

- Understanding that high-tech imaging has greatly increased the prevalence of incidental findings unrelated to the reason for the exam and unlikely to be clinically important
- Appreciating that reporting an incidentaloma may lead to unnecessary, costly and possibly harmful tests and procedures, while failing to report them may lead to a malpractice lawsuit
- Recognizing that the paucity of research on the implications of incidental findings prevents assigning levels of cost vs. benefit for evaluating or failing to evaluate such findings
- Developing a personal approach to reporting and managing incidental findings.

Dr. Berland is also presenting the RSNA Multisession Course, “Genitourinary Series: The Abdominal Incidentaloma—What to Report for the Hepatic, Pancreatic, Adrenal, and Renal Incidentaloma.”

RSNA 2011 registration is under way at RSNA.org/register.

Indian Radiologists Grow as Domestic and Global Force

Numerous factors, from technological advances and new government policies to a booming economy and a multitude of young professionals interested in the specialty, continue to fuel a robust expansion of radiology in India that shows no signs of slowing.

“THERE HAVE BEEN sea changes in Indian radiology in the last two decades,” said Hemant Patel, M.D., D.N.B., D.M.R.E., a consultant radiologist and professor at the Gujarat Imaging Centre Postgraduate Institute of Radiology in Ahmedabad, India. “In the past, radiology was considered a non-clinical, supportive branch of medicine. However, advancements in ultrasound, MR, CT, PET/CT and other imaging modalities, as well as radiobiology, radio-medicine, molecular imaging and interventional radiology, have made radiology a core medical specialty.”

At the same time Indian radiologists are raising their international profile, said Dr. Patel, coordinator of the India Presents session at RSNA 2011. “Many Indian radiologists are publishing their articles in peer-reviewed journals and presenting papers and invited lectures in international forums, and many Phase 3 radiology-related research trials are ongoing in India,” he said.

RSNA 2011 attendees can learn more about those developments during the “India Presents” session, scheduled for Mon., Nov. 28, 10:30 a.m.–12:00 p.m. The session, offered in conjunction with the Indian Radiological & Imaging Association (IRIA), will include an overview of radiology in the region and scientific presentations utilizing MR-PET fusion, PET/CT in oncology, antenatal MR imaging and MR spectroscopy in intracranial cystic masses (see sidebar).

“The emergence of India as a powerful force in healthcare parallels its emergence as a world economic power,” said 2011 RSNA President Burton P. Drayer, M.D. “We believe India Presents will be a highlight of the annual meeting and afford RSNA members a unique opportunity to learn more about Indian radiology.”

Challenges, Opportunities Inherent in India's Size

India's size—it is the world's second-most populous country and seventh largest in geographical area—and economic diversity unmistakably influence radiology practice there. On the one hand, the country's urban centers are rebounding from the global financial crisis and returning to the rapid growth instigated by the fiscal reforms of the early 1990s. This growth is fueled by a growing information technology sector and booming manufacturing and exports.



Patel



Drayer

However, more than 70 percent of the country's 1.2 billion people live in rural areas and 55 percent of the population is poor, according to the Multidimensional Poverty Index 2010 (Oxford Poverty & Human Development Initiative, Oxford Department of International Development, Queen Elizabeth House, University of Oxford). Meanwhile, healthcare costs push an additional 39 million citizens into poverty each year, according to a study published in the January 15, 2011, issue of *The Lancet*.

“India is a country of diverse culture and language; similarly, radiology is also distributed in different locales like private imaging centers, corporate hospitals and public health sectors,” Dr. Patel said. “All metro cities and state capitals have facilities with modern equipment like MDCT, PET/CT and MR. Most academic radiology centers are affiliated with government health hospitals and are equipped with at least 1.5 T MR and 16-slice CT. In small towns and villages, facilities have been restricted to plain X-ray and ultrasound only.”

Discrepancies Slowly Diminishing

Dr. Patel added, however, that imaging services are becoming more evenly distributed—with the advent of easily accessible refurbished units, especially MR and CT, more services are available in smaller towns. He estimated the country now has approximately 1,000 CT machines, ranging from single to 320 slices, as well as 500 MR units and 90 PET/CT scanners. The opportunities for extraordinary growth over the next decade are apparent.

Teleradiology also has helped bring heretofore unavailable services to patients in rural parts of India, Dr. Patel said, while at the same time offering new opportunities to physicians. “In light of India's position as an information technology hub, teleradiology has become a rapidly growing radiology business,” he said.

“Highly trained Indian radiologists are reporting for many radiology centers around the globe.”

In addition to—and in many cases because of—the varied locations in which they work, Indian radiologists see a diverse range of illnesses and diseases. “We do see a lot of infectious disorders including tuberculosis, malaria, typhoid, dengue and many others,” Dr. Patel said. He added that atypical infections are increasing in number, including HIV and hepatitis. Radiologists are seeing more oncology patients, Dr. Patel said, due to emerging research and the advent of PET/CT. In addition, like their peers worldwide, radiologists in India face the challenge of responding to mass casualties resulting from acts of terrorism.

Organized Radiology at Heart of Specialty's Rise

Organized radiology has been essential to radiologists' ability to meet these varied and evolving needs and to capitalize on growth opportunities. IRIA, some 9,000 members strong, was established 80 years ago. “IRIA helps radiologists unite for educational purposes, formulate their rights and promote radiology research,” Dr. Patel said. IRIA's journal, the *Indian Journal of Radiology and Imaging*, is read worldwide, and it is through the organization that many Indian radiologists obtain their annual required CME. IRIA also hosts an exchange program of faculties and residents with other countries. As part of its longstanding partnership with radiologists in India, RSNA has sent seven International Visiting Professor teams to the country over the last 20 years, most recently in 2006.

Also influential is the Indian College of Radiology & Imaging (ICRI), promoting radiologic achievement with strict criteria for membership and fellowship. “Many illustrious leaders in the profession have served in the ICRI, and from it many subspecialty and superspecialty associations evolved for the betterment of radiology in this region,” Dr. Patel said.

“Multidirectional” Growth Slowed but Not Stopped by Infrastructure Situation

Strong organizations will empower Indian radiologists in further developing the specialty, Dr. Patel said. “India is still lagging behind in research-based development in clinical and technological radiology,” he said. “India is a densely populated nation. To serve patients more efficiently, we need more medical facilities. At the same time radiology should be affordable to the general public. Patients covered by medical insurance are increasing, but the number is still small. Services are available free of cost or at a nominal charge in government facilities; however, there are not enough machines to handle the large number of patients in need.”

Those obstacles are offset, however, by new catalysts for growth such as government policies to bring new technology to the public health sector and simplified import policies for foreign equipment. Dr. Patel believes that these changes, along with growth in the number of radiological facilities, wider availability of equipment, and multi-national manufacturing and software development activities based in India,

will facilitate “multidirectional” expansion.

“Looking at the Indian marketplace, one readily sees the potential for this expansion,” he said. □

“INDIA PRESENTS”

Monday, Nov. 28, 10:30 a.m.–12 p.m.

- **Opening remarks**, Dr. Bharadwaj, 2011 president, Indian Radiological & Imaging Association (IRIA)
- **Session 1**, *Dr. Jignesh Thakker, 2011 IRIA Secretary General, chair*
 - Imaging Spectrum of Typical and Atypical Neurotuberculosis, Dr. Rajesh Kapur
 - Intervention in Hemoptysis: A Practical Approach, Dr. Kishor Taori
- **Session 2**, *Dr. Shyam Doda, chair*
 - MR-PET Fusion: A New Door is Open, Dr. Hemant Patel
 - PET/CT in Oncology: An Indian Scenario, Dr. Harsh Mahajan
- **Session 3**, *Dr. Prabhakar Reddy, chair*
 - MR-guided High-frequency Ultrasound (HIFU): An Innovative Patient-friendly Treatment, Dr. Srinivas Desai
 - Antenatal MRI in India—Clinical Practice & Research, Dr. Nitin P. Ghonge
 - MR Spectroscopy in Intracranial Cystic Masses: N. Chidambaranathan
- **Closing remarks**, Burton P. Drayer, M.D., 2011 RSNA president

Advance registration for RSNA 2011 ends Nov. 4. Go to RSNA.org/register for more information.

INDIA FACTS

POPULATION¹

1.2 billion

CAPITAL

New Delhi
(13.9 million)

LARGEST CITY

Mumbai
(20.5 million)

RSNA MEMBERS²

376

RSNA ANNUAL MEETING ATTENDANCE³

811

RSNA HONOREE FROM INDIA

HONORARY MEMBER, 1992

Sudarshan
A. Aggarwal,
M.D.
(New Delhi)

Session for Spanish-speakers also New to RSNA 2011

ANOTHER OF RSNA's offerings for international radiologists, “Imagen Oncologica: Sesion de Actualizacion del Colegio Interamericano de Radiologia,” or “Oncologic Imaging: An Update from the Interamerican College of Radiology,” will be offered Sat., Nov. 26, 1–5 p.m., at McCormick Place Chicago.

Chaired by Oswaldo Ramos, M.D., with moderators Pablo R. Ros, M.D., and Miguel E. Stoopen, M.D., the session will be a bilingual series of presentations covering:

- Key imaging findings in common neoplasms
- Imaging modalities for diagnosis staging and therapy monitoring
- Imaging strategies for early cancer detection
- Appropriate utilization of imaging in oncologic processes

Enroll in this session at RSNA.org/register using course code SAT05.



¹ All populations are estimates based on latest information available. ² RSNA Membership number as of June 1, 2011. ³ RSNA Annual Meeting Attendance number 2006–2010 total.

RSNA Image Share Network Reaches First Patients

Designed to help patients take control of their medical images and reports, the RSNA Image Share network has entered into clinical practice as patients across the country begin to use the system as part of their routine care.

THE PROJECT WAS launched in 2009 through a \$4.7 million contract with National Institute of Biomedical Imaging and Bioengineering (NIBIB) to build a secure, patient-centric medical imaging sharing network based on common open-standards architecture.

Technology Forum

RSNA is overseeing development of the Web-based network for sharing images and reports at five pilot academic institutions. Mount Sinai Medical Center in New York was the first to begin accepting patients, with the other institutions to immediately follow. (See Sidebar)

"We are letting patients know the network is available and inviting them to sign up if interested," said the project's principal investigator David S. Mendelson, M.D., chief of clinical informatics at Mount Sinai. "The idea of RSNA Image Share is to improve quality, safety and efficiency while engaging patients and families in their own care."

RSNA was charged with developing a method for patients to control access to their information through personal health records (PHR) without relying on CDs, Dr. Mendelson said.

RSNA Image Share is based on the XDS.I.b. profile of Integrating the Healthcare Enterprise (IHE®), an initiative among medical leaders, software developers, societies and vendors to improve communication between healthcare equipment, systems and software. The goal is to move closer to a universal electronic health record (EHR) and help physicians meet federal meaningful use requirements in practice.

Although patient participation is voluntary, interest in the network is slowly building, said Dr. Mendelson, who also serves on the RSNA Radiology Informatics Committee (RIC), chairs the RIC subcommittee for IHE and serves on the RIC subcommittee for Structured Reporting.

"The first patients we enrolled didn't have to share their images right away," Dr. Mendelson said. "But when we described how the system works they said, 'hey, that's neat, I'd like to be able to do that.'"

After signing into the network, patients follow a series of steps that tell the Edge Server to retrieve that patient's reports and images. The Edge Server is



Mendelson

Dreyer

a device that sits between a radiology department/imaging center's PACS and RIS and the Internet "Cloud." It provides security services and packages the exam for safe and secure distribution over the Internet.

"There is a 72-hour delay intentionally built into the process to ensure that the patient's doctor sees the results before the patient does, allowing the physician time for a discussion with the patient," Dr. Mendelson said.

From a "jacket" of imaging records, patients can select those they would like to share with their healthcare team. "From that point, the patient can actually see the report and read it before sending it anywhere, so if they're concerned about some of the wording they can discuss it with their ordering physician," Dr. Mendelson said.

“The idea of RSNA Image Share is to improve quality, safety and efficiency while engaging patients and families in their own care.”

David S. Mendelson, M.D.



Radiologists are encouraged to attend the RSNA 2011 Integrating the Healthcare Enterprise (IHE®) Image Sharing Demonstration showing how images and radiology reports can be made part of a patient's personal health record, available securely via the Internet to the patient and authorized care providers. **Above:** Attendees flock to the RSNA 2010 Image Sharing Demonstration.

Because security is a major concern, the project was modeled on security systems that are used by banks, in which patients are given an eight-digit code, much like the code on their ATM card, Dr. Mendelson said.

"Patients create a password or PIN that is known only to them, so it's just like moving your money around at the bank," he said.

In coming years, project investigators will work on developing direct transfer of images for immediate accessibility—necessary, for example, if a patient is flown into a trauma center from another facility.

Vendors Critical to Image Sharing

The participation of healthcare equipment and software developers is essential to widespread adoption of image sharing, said Keith J. Dreyer, D.O., Ph.D., vice-chair of radiology informatics at Massachusetts General Hospital in Boston and an associate professor of radiology at Harvard Medical School.

"RSNA has done a great job of defining the standards for companies to cooperate and move images," said Dr. Dreyer, who serves on the RSNA Radiology Informatics Committee. "The intent of this project was to light a spark among vendors to begin providing data sharing services."

"One of the unique things about the project was that the team engaged a variety of vendors in the implementation and the design, and the develop-

ment of components adhering to standards so that they can all play together nicely," he continued.

To further widespread adoption, image sharing systems are now being made available to the public, Dr. Dreyer said.

"The project has created a green field for vendors who are interested in offering their services in a standardized way to the industry," he said.

Dr. Dreyer encourages radiologists to attend the RSNA 2011 IHE Image Sharing Demonstration (see sidebar) featuring systems and vendors used in the network. "Attendees will see the products available that make data sharing easier." □

WEB EXTRAS

☑ To view a Personal Health Record (PHR) demonstration from the RSNA Image Share Network, go to rsnanews.RSNA.org.

RSNA 2011 FEATURES IHE® IMAGE SHARING DEMONSTRATION

The RSNA 2011 Integrating the Healthcare Enterprise (IHE®) Image Sharing Demonstration shows how images and radiology reports can be made part of a patient's personal health record, available securely via the Internet to the patient and authorized care providers. The demonstration features leading vendors in medical imaging and electronic health records and is based on interoperability specifications from the IHE initiative.

To register for RSNA 2011, go to RSNA.org/register.



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YOUR DONATIONS IN ACTION



With an RSNA R&E Foundation Grant, **Xiang Li, Ph.D.**, is addressing key issues in the management of CT radiation including the development of a dose reporting system that will provide an estimate of radiation dose and potential cancer risk for each examination, and the creation of patient specific protocols based on patient size, age and imaged body part.

Examples of patient-specific computer models created from clinical CT data of pediatric patients, ages 2 months to 15 years.



Journal Highlights

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

Image-guided Thermal Ablation of Lung Malignancies

A relatively new treatment option for primary and metastatic lung cancer in patients ill-suited for surgery, image-guided thermal ablation appears to have a clinical role not only in local control but also in symptom palliation. The therapy uses image guidance to place needlelike applicators directly into the tumors, destroying them with either intense heat or cold.

In a State-of-the-Art review article in the September issue of *Radiology*, (RSNA.org/Radiology), **Damian E. Dupuy, M.D.**, of Rhode Island Hospital in Providence, discusses image-guided thermal ablation techniques including radiofrequency, microwave, laser and cryoablation, as well as their clinical applications and patient selection criteria.

While thermal ablation has achieved an overall survival rate of 48 to 80 percent at two years, there are no completed randomized controlled clinical trials comparing thermal ablation therapies alone or in combination versus other more established treatments for lung malignancies.

"The exact role of the various devices in the treatment of this heterogeneous group of patients has yet to be determined; therefore, properly designed clinical studies are necessary to advance this burgeoning field within interventional oncology," Dr. Dupuy concludes.



CT fluoroscopy-guided radiofrequency (RF) ablation in a patient with metastatic colon cancer to the right upper lobe. The patient is under general anesthesia during the procedure. A switching controller is used to power two RF electrodes (arrows) to achieve a larger volume of tissue coagulation.

(*Radiology* 2011;260:3:633-655) ©RSNA, 2011. All rights reserved. Printed with permission.

Border Zone Infarcts: Pathophysiologic and Imaging Characteristics

Various imaging modalities have been used to determine the presence and extent of hemodynamic compromise or misery perfusion associated with border zone infarcts, and some findings have proved to be independent predictors of subsequent ischemic stroke.

A combination of several advanced techniques can be useful for identifying the pathophysiologic process, making an early clinical diagnosis, guiding management and predicting the outcome.

In an article in the September-October issue of *RadioGraphics* (RSNA.org/radiographics), **Rajiv Mangla, M.D.**, of the University of Rochester, N.Y., and colleagues review the different causal mechanisms and anatomic locations of cortical and internal border zone infarcts and describe their appearances at MR imaging, CT and transcranial Doppler ultrasound in detail.

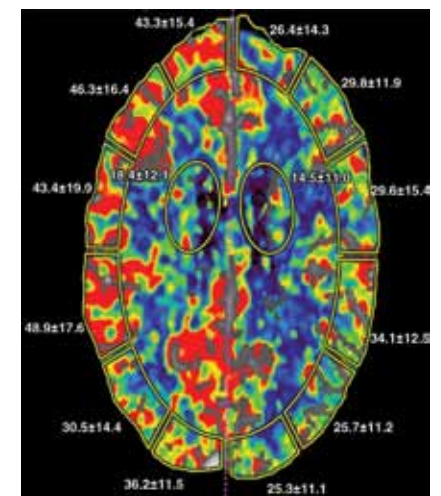
Specifically, the authors discuss:

- The types of border zone (watershed) infarcts
- The pathophysiologic and radiologic features of each type of infarct
- The role of imaging in management of patients with border zone infarcts

Different therapeutic approaches may be required to prevent early clinical deterioration in patients with different types of border zone infarcts, the authors write.

"Advanced imaging techniques such as diffusion and perfusion MR imaging, PET, perfusion CT, and transcranial Doppler ultrasound can be helpful for understanding the pathophysiology of these infarcts, detecting associated hemodynamic compromise, and guiding disease management," the authors conclude.

RadioGraphics



Decreased cerebrovascular reserve in a patient with an internal border zone infarct. Axial T2-weighted fluid-attenuated inversion recovery image shows multiple areas of hyperintense signal in the left corona radiata. Cerebral blood flow map obtained at CT after the administration of acetazolamide shows reduced cerebral blood flow in cortical areas of the left cerebral hemisphere and increased flow in the normal right cerebral hemisphere.

(*RadioGraphics* 2011;30:1201-1214) ©RSNA, 2011 All rights reserved. Printed with permission.

Cardiac PET/CT Symposium published in *RadioGraphics*: See Page 23

Radiology in Public Focus

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

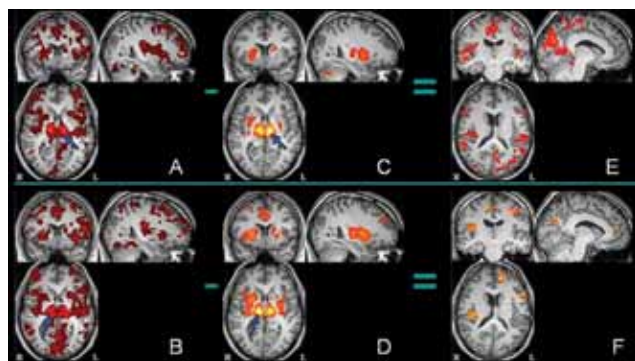
Thalamic Resting-State Functional Networks: Disruption in Patients with Mild Traumatic Brain Injury

RESTING-STATE functional MR imaging (RS-fMRI) can be used as an additional imaging modality for detecting thalamocortical connectivity abnormalities and for better understanding the complex persistent postconcussive syndrome.

In a study of 24 patients with mild traumatic brain injury (MTBI) and 17 healthy controls, Lin Tang, Ph.D., of New York University School of Medicine, and colleagues used RS-fMRI to investigate whether thalamic resting-state networks (RSNs) are disrupted in MTBI patients. Investigators analyzed RS-fMRI data using a standard seed-based whole-brain correlation method to characterize thalamic RSNs and investigated the association between thalamic RSNs and performance on neuropsychologic and neurobehavioral measures in MTBI patients using the Spearman rank correlation.

While a normal pattern of thalamic RSNs with relatively symmetric and restrictive connectivity was demonstrated in the healthy control group, results showed that thalamic RSNs are disrupted in MTBI patients, suggesting that there may be reactive upregulation of thalamocortical connectivity associated with subtle thalamic injury.

“The observed disruption in thalamic functional RSNs in MTBI can be used for detecting subtle injury and to better understand the complex persistent postconcussive syndrome in these patients,” researchers concluded.



Images show group thalamic resting state networks (RSNs) in 3D views obtained by using the one-sample *t* test ($P < .001$, $k > 100$) in **A, B**, patients with mild traumatic brain injury (MTBI) and, **C, D**, control subjects. **E, F**, The difference maps between the two groups were compared by using the two-sample *t* test ($P < .01$, $k > 100$). Blue arrows = where seeds were placed; the patterns of the left (L) and right (R) thalamic functional networks during the resting state are shown in the first and second rows, respectively. Compared with healthy control subjects, patients with MTBI showed more widely distributed thalamic functional connectivity during the resting state, with increases in regions involving the cingulate, temporal, and frontal gyri.

(*Radiology* 2011;260;3:831–840) All rights reserved. Printed with permission.

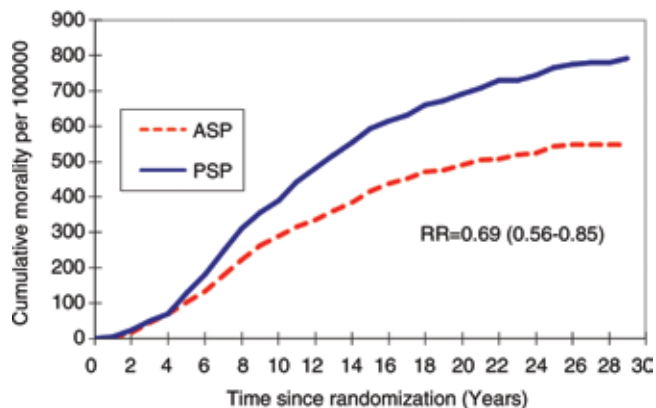
Swedish Two-County Trial: Impact of Mammographic Screening on Breast Cancer Mortality during 3 Decades

THE RESULTS OF THE Swedish Two-County Trial of mammographic screening are qualitatively the same at 29-year follow-up as when they were first published: a substantial and significant reduction in breast cancer mortality was associated with an invitation to screening.

In the study, László Tabár, M.D., of Falun Central Hospital, in Sweden and colleagues randomized 133,065 women into two groups—one that received an invitation to screening and another that received usual care. Results showed 30 percent fewer breast cancer deaths among all women (attenders and non-attenders) in the group invited to undergo screening. The screening phase of the trial lasted approximately seven years. Women between the ages of 40 and 49 were screened, on average, every 24 months, and women age 50 to 74 were screened, on average, every 33 months.

At 29 years of follow-up, the number of women needed to undergo screening for seven years to prevent one breast cancer death was 414, according to local data, and 519 according to consensus data. Most prevented breast cancer deaths would have occurred—in the absence of screening—after the first 10 years of follow-up.

“Invitation to mammographic screening results in a highly significant decrease in breast cancer–specific mortality,” researchers concluded. “Evaluation of the full impact of screening, in particular estimates of absolute benefit and number needed to screen, requires follow-up times exceeding 20 years because the observed number of breast cancer deaths prevented increases with increasing time of follow-up.”



The graph shows cumulative mortality from breast cancer according to study group, as determined with local end point committee data. ASP: active study population; PSP: passive study population.

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Media Coverage of RSNA

In July 2011, media outlets carried 933 RSNA-related news stories. These stories reached an estimated 459 million people.

A study published online in *Radiology* received widespread attention in the press in late June and early July. “Swedish Two-County Trial: Impact of Mammographic Screening on Breast Cancer Mortality during 3 Decades” (see opposite page) was covered by more than 719 print, broadcast and online outlets, including newspaper articles in the *Los Angeles Times*, *Daily Mirror* (London) and *Chicago Tribune*, and television news stories on “World News with Diane Sawyer,” “NBC Nightly News,” “Today Show,” “Good Morning America,” MSNBC and CNN.

Additional print coverage included *South Florida Sun-Sentinel*, *Star Ledger*, *Orange County Register*, *Vancouver Sun* and *Montreal Gazette*.

Other broadcast coverage included WABC-TV (New York), WPIX-TV (New York), WCBS-TV (New York), WNYW-TV (New York), KABC-TV (Los Angeles), KTLA-TV (Los Angeles), KTTV-TV (Los Angeles), WLS-TV (Chicago), WMAQ-TV (Chicago), WGN-TV (Chicago), WPVI-TV (Philadelphia) and KDFW-TV (Dallas/Fort Worth).

Online coverage included Yahoo! News, MSNBC.com, CNN.com, ABC News – Online, *Wall Street Journal* – Online, *USAToday.com*, *Los Angeles Times* – Online, *Chicago Tribune* – Online, *Reuters.com*, *USNews.com* and WebMD.



September Public Information Activities Focused on Ovarian, Prostate Cancers

In recognition of Ovarian Cancer Awareness Month and Prostate Cancer Awareness Month in September, RSNA distributed public service announcements (PSAs) focusing on:

- Symptoms of ovarian and prostate cancers
- Risk factors
- Screening methods
- Possible treatment options

In addition to the PSAs, RSNA distributed the “60-Second Checkup” audio program to radio stations. The “60-Second Checkup” focused on risk factors for ovarian cancer.

RadiologyInfo.org Posts “Your Radiologist Explains” Video Series

RadiologyInfo.org, the RSNA and American College of Radiology (ACR) public information website, has posted 12 new video clips to help explain various radiology procedures to patients. These videos are the latest in the “Your Radiologist Explains” series to provide website visitors with a unique medium for learning about radiology tests and treatments.

The videos feature PowerPoint presentations with images and narration. All presentations were created by members of the RSNA-ACR Public Information Website Committee.

Visit *RadiologyInfo.org* to view the new videos.

Other Radiology Headlines

Gold Nanoparticles Improve Radiation Therapy Effectiveness

Supplementing brachytherapy with gold nanoparticles, which act as a vascular disrupting agent, can increase the effectiveness of the cancer treatment while shortening its duration, according to new research presented last month at the 2011 Joint Meeting of the American Association of Physicists in Medicine and Canadian Organization of Medical Physicists.

Researchers at Brigham and Women’s Hospital in Boston performed a computer simulation of gold nanoparticles in a tumor blood vessel cell, where brachytherapy seeds had been placed nearby. Results showed the nanoparticles boosted the radiation dose to the blood vessel cells. Researchers next will test the method in vivo.

“Although we have also shown that the concept may work for external beam radiation therapy, brachytherapy is particularly attractive for this idea due to the way this low-energy type of radiation interacts with the gold,” said Ross I. Berbeco, Ph.D., lead author of the study and staff physicist at Brigham and Women’s Hospital, Dana-Farber Cancer Institute, and assistant professor of radiation oncology at Harvard Medical School, Boston.

Source: American Association of Physicists in Medicine

Software Estimates Radiation Risk Based on Age, Gender, Size

New software presented last month at the 2011 Joint Meeting of the American Association of Physicists in Medicine and Canadian Organization of Medical Physicists estimates radiation risk based on age, gender and size, versus a “one size fits all” approach.

Lead author Ehsan Samei, Ph.D., chief physicist at Duke University Medical Center in Durham, N.C., and colleagues used the software to analyze more than 6,500 CT scans of the chest, abdomen/pelvis and head performed during a five-week period at two hospitals. The new software factors in the radiation output noted on the CT machine, as well as the patient’s age, gender, size and organ being imaged to calculate the effective dose and an index of risk specific to the patient.

“This system quantifies the risks encountered by individual patients,” said Olav Christianson, co-author of the study and a medical physicist at Duke. “It is designed based on these very patient-specific factors to guide doctors in determining the most appropriate radiation dose patients should receive during a CT exam.”

Source: American Association of Physicists in Medicine

Education and Funding Opportunities



CORE Workshop

Formerly the Revitalizing the Radiology Research Enterprise (RRRE) program, the newly named Creating and Optimizing the Research Enterprise (CORE) workshop will be held Friday and Saturday, Oct. 28 and 29 in Oak Brook, Ill. The workshop will focus on strategies for developing and expanding research programs in radiology, radiation oncology and nuclear medicine departments. The CORE program features a combination of presentations, case studies and group discussions. Register now at RSNA.org/CORE.

October 28–29, 2011
Oak Brook, Ill.
Registration Deadline
September 23

Writing a Competitive Grant Proposal

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

A limited number of slots are available for this 1½-day intermediate-level program that combines didactic and small group interactive sessions designed to help radiologic researchers understand and apply the key components of writing a competitive grant proposal. Topics to be covered are the NIH grant review process, developing specific aims and funding opportunities.

Guided by a faculty of leading researchers with extensive experience in all aspects of grant applications and funding, the program will focus on developing realistic expectations and provide tools for getting started. Faculty includes: G. Scott Gazelle, M.D., Ph.D., M.P.H., of Massachusetts General Hospital in Boston, Ruth Carlos, M.D., of the University of Michigan Health System in Ann Arbor, and Elizabeth Burnside, M.D., M.P.H., of the University of Wisconsin in Madison.

The course fee is \$175. Registration forms can be found at RSNA.org/CGP. Contact Fiona Miller at 1-630-590-7741 or fmiller@rsna.org for further information.

February 3–4, 2012
RSNA Headquarters
Oak Brook, Ill.
Application Deadline
December 16

Medical Meetings

October 2011–
January 2012

OCTOBER 2–6
American Society for Radiation Oncology (ASTRO), 53rd Annual Meeting, Miami Beach Convention Center, Fla.
• www.astro.org

OCTOBER 7–8
American Association of Physicists in Medicine (AAPM), CT Dose Summit, Westin Denver
• www.aapm.org/meetings/2011CTS

OCTOBER 13–16
International Urogenital Radiology, joint meeting of European Symposium on Urogenital Radiology (ESUR) and Society of Uroradiology, Hotel Dubrovnik Palace, Croatia
• www.esur2011.com.hr

OCTOBER 16–19
Radiology Business Management Association (RBMA), Fall Educational Conference, Aria Resort & Casino Las Vegas
• www.rbma.org

OCTOBER 21–23
Society of Radiologists in Ultrasound (SRU), 21st Annual Meeting, the Westin Hotel, Chicago
• www.sru.org

OCTOBER 21–25
Société Française de Radiologie (SFR), Les Journées Françaises de Radiologie (JFR) 2011, Palais des Congrès de Paris
• www.jfrefexpo.com

OCTOBER 26–28
Israel Radiological Association, Annual Meeting, Hotel Dan Eilat, Tel Aviv
• www.israel-radiology.org.il

OCTOBER 27–29
European Society of Cardiac Radiology (ESCR), Annual Scientific Meeting, European Centre for Arts, Culture and Science, Amsterdam, Netherlands
• www.escr.org

OCTOBER 27–29
67th Korean Congress of Radiology and Annual Delegate Meeting of the Korean Society of Radiology, COEX, Seoul
• www.radiology.kr

JANUARY 9–14, 2012
Integrating the Healthcare Enterprise (IHE®) North American Connectathon, Hyatt Regency Chicago
• www.ihe.net/Connectathon

Annual Meeting Watch

Enroll Now for Courses

Register by Nov. 4 to receive the discounted registration fee and full conference materials mailed to you in advance. International visitors must register by Oct. 21 to receive these materials in advance. Registrations received after Nov. 4 will be processed at the increased fee and conference materials must be obtained at the McCormick Place Convention Center. No hotel reservations will be accepted after Nov. 4.

Registration materials include:

- **Name badge and holder**
- **Course and tour tickets** (if requested)
- **Attendance vouchers for CME credit** (if applicable)
- **Free pass for Chicago Metra Electric Line trains**
- **Airport shuttle discount coupon**

- **ExpoCard**—Use this electronically personalized business at the technical exhibition to request exhibitor information.
- **Pocket Guide**—The RSNA 2011 *Pocket Guide* is an easy-to-use reference guide to everything meeting related.

Name Badge

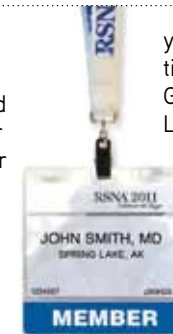
A name badge is required to attend RSNA courses or events or to enter the exhibit halls.

RSNA will use radiofrequency identification (RFID) badge scanning technology within the Technical Exhibit Halls. No personal information is stored in the RFID badge, only an ID number. Should you wish to “opt out” of this program, please visit either Help Center onsite located in the Grand Concourse or Lakeside Center Ballroom on Level 3.

RSNA Meeting Program in Brief

A complimentary copy of the *RSNA Meeting Program in Brief*, an official meeting bag and a name badge lanyard can be obtained by presenting

your voucher at the distribution counters located in the Grand Concourse, Level 3 or Lakeside Center, Level 2, Hall E (near coat check).



Course Enrollment

Seats are still available in many of the courses to be offered at RSNA 2011. Online registration occurs instantly, while faxed or mailed registration forms are processed in the order of receipt. The Registration, Housing and Course Enrollment brochure and online registration is available at RSNA.org/register. You must be registered for RSNA 2011 in order to enroll in courses.

Guarantee Your Seat!

Tickets are required for various meeting components, including refresher and multi-session courses, informatics workshops and RSNA tours and events. All ticketed



EXPOCARD

courses must be confirmed prior to Nov. 23 to guarantee a seat. RSNA ticketed courses fill up fast, so ensure you get the courses you need by enrolling at RSNA.org/register. Onsite course ticketing has been eliminated. Registrants without tickets will be allowed entrance into a course after all ticketed registrants have been seated.

Book with Gant Travel for a Chance to Win

Gant Travel has been RSNA's official domestic travel agency for the past 11 years. Custom travel itineraries may be booked by phone and e-mail Monday-Friday, 7 a.m. to 6 p.m. CT. Additional taxes and booking fees will apply to airline ticket prices and afterwards emergency assistance.

RSNA attendees who book air travel through Gant Travel by Sept. 30, 2011, will be entered into a drawing to

receive a \$500 (USD) travel credit good toward future travel on United Airlines. Contact Gant at 1-877-613-1192, international +1 011 630-227-3873 or RSNA@ganttravel.com.

Reserve Your Room Now

Discounted hotel room rates are available for RSNA attendees. To see the hotel list and their room rates go to RSNA2011.rsna.org. Don't delay and miss your change to save. Register and make your hotel reservations today.

Continued on next page

Annual Meeting Watch

Continued from previous page

Global Focus Expands at Technical Exhibition

Elevating its status as a global event, RSNA 2011 will feature two new countries—France and China—in pavilions housed in the Special Interest Section of the RSNA 2011 Technical Exhibition. Korea, Germany and Canada (Ontario) are also featured in pavilions in 2011.

Introduced at RSNA about a decade ago, pavilions offer exhibitors from these countries the unique opportunity to showcase their products and services to thousands of attendees from across the globe. The pavilions are supported through funding from each country's government.

The evolving list of pavilion participants reflects RSNA's growing international presence. Of the nearly

700 exhibitors featured at RSNA 2011, about 26 percent are from countries outside the U.S.

Names of exhibitors from each country, floor plans and locations for pavilions are available on the RSNA Annual Meeting page at RSNA2011.rsna.org. Click Welcome Exhibitors, scroll to Quick Links on the left-hand side and click Exhibitor list.

WEB EXTRAS

To view a video about the RSNA 2011 Technical Exhibition, go to RSNA2011.rsna.org.

Evolution of Imaging Focus of Museum Exhibit

The discovery of the X-ray, its societal impact and the progress of medical imaging are the focus of "Milestone in Medical Imaging: From X-Ray to Nuclear Medicine," a new exhibition at the International Museum of Surgical Science, housed in a historic mansion on Lake Shore Drive.

The museum features exhibits from around the world that trace the fascinating story of surgery's development through the ages. The collection includes art and artifacts associated with surgery as well as history, science, health and cultural studies.

Eye on Chicago

One of the few remaining lakefront mansions, the building received historic status in 1988, is listed in the National Register and the Illinois Register of Historic Places and is a Chicago landmark.

Located at 1524 N. Lake Shore Dr., the museum is open Tuesday-Friday, 10 a.m.-5 p.m., Saturday, 10 a.m.-9 p.m., and Sunday, 12-5 p.m. For more information, visit www.imss.org.

Search Engine Simplifies RSNA Meeting Program Online

Use RSNA's online program and user-friendly search engine to find presentations to fit your schedule at RSNA 2011. The complete roster of special interest/controversies/hot topic sessions, multisession and refresher/informatics courses and vendor computer workshops are available in RSNA's online meeting program. Along with searching for courses by title and name of presenter, users can search the online program by day, area and subspecialty, and sort findings from earliest to latest.

On the Web

To view the online meeting program, go to RSNA2011.RSNA.org.

For Your Benefit

RSNA Annual Meeting Broadens Horizons for First-Time Attendee

Besides being awed at the sheer size and scale of the world's largest medical meeting, one first-time annual meeting attendee says he was most impressed by the depth and breadth of the lectures, presentations and exhibits offered at RSNA 2010.

"The main reason I attended last year's RSNA annual meeting for the first time was to broaden my horizons as an academic radiologist," said Travis Browning, M.D., an assistant professor of abdominal imaging at the University of Texas (UT) Southwestern Medical Center at Dallas. "By being exposed to such a wide range of presentations, I discovered trends in both best practice as well as future innovation."

Although Dr. Browning said the lectures were most beneficial—particularly for their take-home value—the RSNA Technical Exhibition was his favorite part of the meeting. "I most enjoyed the vendor exhibits," Dr. Browning said. "At my institution, I am a liaison with one of our hospital's IT staff, and having the opportunity to review cutting-edge technologies and future developments really helped me toward planning for the future."

As an assistant professor of abdominal imaging at UT for about two years, Dr. Browning understands the importance of staying plugged into the rapidly evolving advancements in radiology for the duration of his career.

"It is important for radiologists to attend the annual meeting early in their careers to learn that there are often different ways to practice radiology than might have been experienced locally through their residency program," Dr. Browning said. "I feel that it is important to take the next step from the 'art of medicine' to the system and science of medicine, which is greatly facilitated by organizations like RSNA."

To first-time RSNA 2011 attendees, Dr. Browning suggests bracing for the size and scope of the meeting, which he said is impossible to explain to the uninitiated.

"I knew from speaking to others that this is the largest meeting for radiologists, but I was taken aback by the sheer scale,"

Dr. Browning said. "From the size of the convention center, to the diversity of lectures, to the variety of vendors, to the logistics of busing that volume of people throughout central Chicago, I was constantly amazed."

First-time attendees should also prepare for the educational experience of a lifetime, he said.

"Between the lectures, the posters, the unknown cases, the vendors and just the experience of the meeting, going to RSNA is essentially one-stop shopping for all of your radiology update needs," Dr. Browning said.



RSNA 2011 Registration

How to Register

There are four ways to register for RSNA 2011:

1 INTERNET
Go to RSNA.org/register

2 FAX (24 hours)
1-800-521-6017
1-847-996-5401

3 TELEPHONE
(Mon.-Fri. 8:00 a.m. – 5:00 p.m. ct)
1-800-650-7018
1-847-996-5876

4 MAIL
Experient/RSNA 2011
568 Atrium Drive
Vernon Hills, IL 60061 USA

Registration Fees

	BY NOV. 4	AFTER NOV. 4	
\$ 0	\$100	RSNA/AAPM Member	
0	0	RSNA/AAPM Member Presenter	
0	0	RSNA Member-in-Training, RSNA Student Member and Non-Member Student	
0	0	Non-Member Presenter	
165	265	Non-Member Resident/Trainee	
165	265	Radiology Support Personnel	
750	850	Non-Member Radiologist, Physicist or Physician	
750	850	Hospital or Facility Executive, Commercial Research and Development Personnel, Healthcare Consultant and Industry Personnel	
300	300	One-day registration to view only the Technical Exhibits	

Important Dates

October 21	International deadline to have full-conference materials mailed in advance
November 4	Final discounted advance registration, housing and course enrollment deadline to have full-conference materials mailed in advance
Nov. 27 – Dec. 2	RSNA 97th Scientific Assembly & Annual Meeting

New Self-Assessment Modules (SAMs) Available from RSNA

Each month, new online Self-Assessment Modules (SAMs) are added to RSNA.org under the Education tab. These online SAMs help physicians stay on top of their Maintenance of Certification (MOC) requirements. All of RSNA's online SAMs are qualified by the American Board of Radiology (ABR) in meeting the criteria for self-assessment toward the purpose of fulfilling requirements in the ABR MOC program.

As a benefit, RSNA members may access all online SAMs courses at no additional cost. Each SAM has been approved for *AMA PRA Category 1 Credit™*, allowing participants the added benefit of earning CME credit. Non-members may access online SAMs for a fee of \$50 per course.

Several new SAMs topics are now available online, including pediatrics, gastrointestinal conditions and radiation oncology.

Additionally, 30 in-person SAMs courses will be offered at RSNA 2011, providing attendees with the opportunity to obtain both CME and SAM credit. For

members, attendance to SAMs courses is free; non-members may attend SAMs courses for a fee of \$50.

To view all RSNA online SAMs, please visit RSNA.org/education. For more information, call 1-800-272-2920 x3733.

For more information about registering for RSNA 2011, visit RSNA2011.RSNA.org, e-mail reginfo@rsna.org or call 1-800-381-6660 x7862.

Residents & Fellows Corner

Make RSNA Career Connect Part of Your Job Search

RSNA Career Connect offers many tools and options to help residents and fellows embarking on a job search. Go to careers.rsna.org to experience:

- **Free Resume Posting**—Resume posting is free to members and non-members. Follow the easy upload instructions and your resume is immediately included in the “full indexed search,” allowing potential employers to easily see it.
- **Job Search**—Use the search filters on Career Connect to find a job that meets your qualifications in terms of location, practice setting and size, and more. In addition, you can create a search agent and receive e-mails when your desired types of jobs become available.

Learn more about Career Connect in the RSNA Services area at RSNA 2011. Representatives will be available to help you post a resume and employers will be posting their very latest jobs.



Cardiac PET/CT Focus of Special *RadioGraphics* Series

Why should we be interested in cardiac PET/CT imaging?

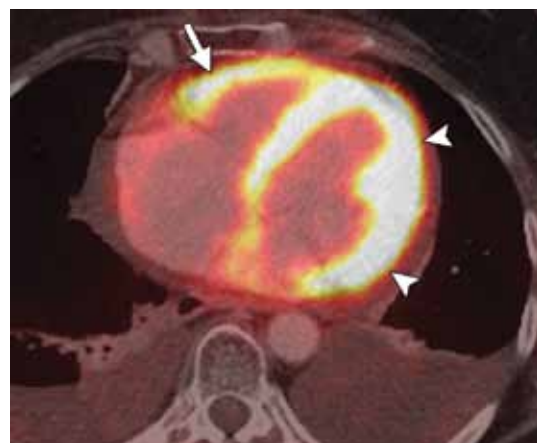
That is the question asked—and answered—by Robert M. Steiner, M.D., in an editorial previewing a special symposium of four comprehensive articles by leaders in the ever-developing field of cardiac PET/CT published in the September-October issue of *RadioGraphics* (RSNA.org/RadioGraphics).

Growth in cardiac PET/CT is reflected not only in medical literature but also in the volume of studies performed using this rapidly expanding technology, Dr. Steiner writes.

“Despite the proliferation of competing technologies, including MR imaging, multidetector CT and advanced echocardiography, the volume of cardiac PET/CT studies continues to grow exponentially,” Dr. Steiner writes. “This interest is partially related to the rapid growth of the use of PET in oncologic diagnosis and posttreatment follow-up examinations.”

Articles included in the one-time *RadioGraphics* symposium are:

- “Cardiac PET/CT for the Evaluation of Known or Suspected Coronary Artery Disease,” by Marcelo F. Di Carli, M.D., and Venkatesh L. Murthy, M.D., Ph.D.;
- “Complementary Value of Cardiac, FDG PET and CT for the Characterization of Atherosclerotic Disease,” by Paul Stolzmann, M.D., and colleagues;
- “Utility of FDG PET/CT in Inflammatory Cardiovascular Disease,” by Olga G. James, M.D., and colleagues (see figure, *right*); and
- “How to Differentiate Benign versus Malignant Cardiac and Paracardiac 18F FDG Uptake at Oncologic PET/CT,” by Alan H. Maurer, M.D., and colleagues.



An image from the *RadioGraphics* study by Olga G. James, M.D., and colleagues: Newly diagnosed biventricular cardiomyopathy in a 49-year-old woman after one year of chemotherapy for breast cancer. Echocardiography demonstrated markedly decreased left and right ventricular function. Whole-body PET was performed for restaging of breast cancer. (a) Axial PET/CT image shows markedly increased FDG uptake in the right (*arrow*) and left (*arrowheads*) ventricular myocardium. Axial CT revealed paramediastinal changes of radiation fibrosis.

RSNA.org

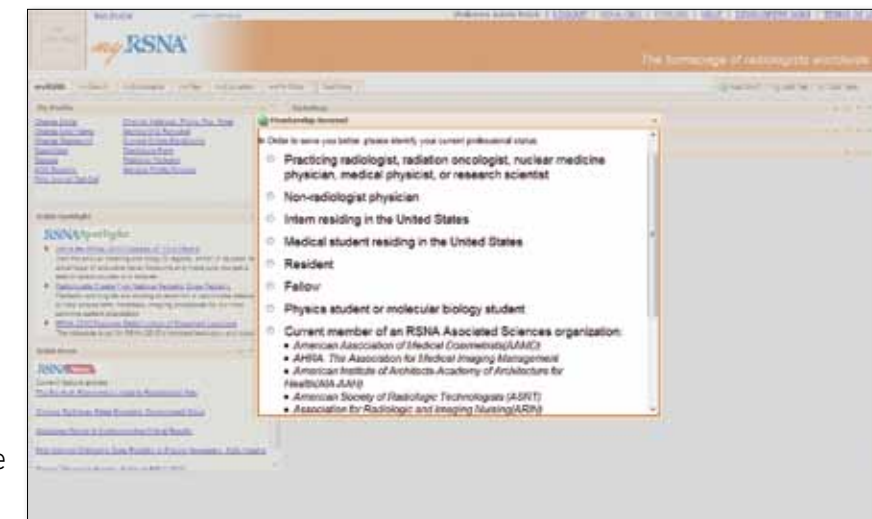
Renew Your RSNA Membership Online

RSNA membership renewal for 2012 is now open at RSNA.org/renew and at myRSNA®. To use myRSNA to pay your membership dues, click “myRSNA” at the top of the RSNA.org homepage or go to myRSNA.org.

- Enter your username and password and then click Membership Renewal in the My Profile section. Before beginning the renewal process, take a moment to update your profile with current contact information.
- To update specialty information, click Specialties in the My Profile section and select your primary specialty and subspecialty. After entering your information, click Update Specialties to save these changes to your file.

All RSNA members have access to RSNA journals online. Because online access to *Radiology* and *RadioGraphics* is tied to membership status, if your payment has not been received by Dec. 31, 2011, your online subscriptions will be automatically inactivated.

Practices can take advantage of RSNA’s group billing option. For more information on the option and/or to renew membership by phone, contact the RSNA Membership Department toll free at 1-877-RSNA-MEM or at 1-630-571-7873, or send an e-mail to membership@rsna.org.



Web Tip

myCME Tracks Your Courses

Use myCME to track current and completed Continuing Medical Education (CME) courses for any year beginning in 2006. myRSNA users can track total Self-Assessment Module (SAMs) credits and total AMA PRA Category 1 Credits™.

To read about new online SAMs added each month to RSNA.org, see Page 22.

COMING NEXT MONTH

What’s the latest on the isotope shortage? Nuclear medicine physicians have struggled in recent years with unpredictable supplies of certain radioisotopes, prompting calls for increased domestic production. Learn what’s happening now in the special October/November issue of *RSNA News*.

VIRTUAL
RSNA® 2011
Celebrate the Image

EXPERIENCE
THE RSNA 2011 VIRTUAL MEETING

Sign-up Begins October 27, 2011
Watch for more details coming soon!

NEW

The **RSNA 2011 Virtual Event**, a FREE member benefit, will feature educational offerings, honored lecturers, Essentials courses, opportunities to earn CME credit, and much more!

- Scientific paper sessions and education exhibits
- Cases of the Day, complete with expert discussion
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Gholam R. Berenji, M.D.

“The RSNA R&E Seed Grant made it possible to begin creating an enterprise-wide method to inform clinicians about organ specific and accumulated CT radiation exposure of their patients. This is essential to reducing radiation in today's imaging practice.”



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