Video Glasses Ease Patient Anxiety

ALSO INSIDE:
Dual Residencies Breaking New Ground
Global Imaging Outreach Targets Developing Countries
Research Reignites Mammography Debate
RSNA/ACR Spearhead Patient-centered Care

RSNA 2014 Course Enrollment
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RSNA MISSION
The RSNA promotes excellence in patient care and healthcare delivery through education, research, and technologic innovation.

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Help Celebrate the Third Annual International Day of Radiology

On November 8, 2014, join 110 radiology organizations from more than 57 countries in celebrating the advances that radiologic innovations have brought to patients worldwide.

The mission of the International Day of Radiology (IDoR) is to build global public awareness of the value that radiology research, diagnosis and treatment contribute to safe patient care, and to build understanding of the vital role radiologists perform in healthcare delivery. A major focus in 2014 is on advances in brain disease imaging, research and treatment.

IDoR is sponsored by RSNA, the European Society of Radiology (ESR) and American College of Radiology (ACR), with a dedicated website (IDoR2014.com) and social media activities. Visit RSNA.org/IDoR2014 for promotional materials you can customize for your practice or organization.

CLARIFICATION
Part of the last sentence in the story “Diffusion-tensor Imaging Aids in ADHD Follow Up,” in the June 2014 print edition of RSNA News, was inadvertently eliminated during layout. The full sentence read, “ADHD affects approximately 7 percent of the world population and is one of the most common childhood disorders.”

SAR BESTOWS HONORS
The Society of Abdominal Radiology (SAR) awarded its 2014 Walter B. Cannon Medal to Robert J. Stanley, M.D., at its recent annual meeting. Dr. Stanley is professor emeritus in the Department of Radiology at the University of Alabama at Birmingham. William H. Bush, Jr., M.D., was presented the special recognition Crystal Award for his contributions to SAR and abdominal imaging, Dr. Meyers presented the RSNA Annual Oration in Diagnostic Radiology at RSNA 1986.

RAD/PATH Group Exploring Potential for Integration of Diagnostic Imaging
After more than a year of discussion and planning by representatives from RSNA’s Research Development Committee and the American Society for Clinical Pathologists (ASCP), an exciting collaborative workshop came to fruition in April 2014: the RSNA/ASCP Workshop on Radiology and Pathology Diagnostics. Is it time to integrate? Approximately 35 attendees from both specialties gathered to discuss the potential for an integrated approach to diagnostic imaging. Speakers and panelists were organized around the following areas:

• Fundamentals of image-based radiology/pathology correlation issues
• Integration and communication of non-image based data
• Opportunities for integrated imaging system workflow
• High dimensional fused-informatics: Is there an opportunity to redefine the diagnostic process?
• Education and training programs

One of the first follow-up activities is an RSNA 2014 special interest session where moderators will present some potential outcomes and implications of the workshop.
AAPM Offers Resources on CT Dose-Check Standard

The American Association of Physics in Medicine (AAPM) has developed a slide presentation explaining the National Electrical Manufacturers Association’s Medical Imaging & Technology Alliance (META) XR 28 standard, also known as MITA Smart Dose. Developed by the AAPM Working Group on Standardization of CT Nomenclature, AAPM resources explain how the standard’s dose notifications and alerts work, how they should be used and caution for certain clinical applications.

CT scans sold in the U.S. must now comply with the MITA Smart Dose standard. Manufacturers are also working to ensure that as many of their installed units as possible meet the new standard.

In January 2016, Medicare will begin reimbursing 5 percent less for CT scans that are acquired on technology that does not meet the MITA Smart Dose standard. Providers are also working to ensure that as many of their installed units as possible meet the new standard.

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RSNA News

RSNA/ACR Programs Lead the Way in Patient-Centered Care

BY MARY HENDERSON

We've heard the clarion call: Healthcare's new economics require all providers to transition from volume- to value-based care. For radiologists, that means shifting the practice paradigm from transactional to consultative and focusing on both interpretation and outcomes. Radiology leaders are reminding other imaging professionals that becoming more patient-centered is imperative.

To help radiologists take practical steps toward patient-centeredness, the RSNA and the ACR have established resource-rich programs, Radiology Cares and Imaging 3.0™, respectively. Both initiatives and their online toolkits stocked with the resources radiologists need to build a modern practice focused on high-value, patient-centered care—including educational materials, case studies, videos and more. (See sidebar)

Need a customizable PowerPoint presentation to share with hospital administrators or community groups or a powerful video on the importance of conveying empathy? Want to quickly peruse media, trade and scientific articles on patient-centeredness? It's all available through RSNA's Radiology Cares: The Art of Patient-Centered Practice.

Looking for practical ways to implement changes in your practice that have been successful in other organizations? Need a quick update on accountable care organizations (ACOs) or help writing a mission statement and setting goals with associated metrics? Check out ACR's Imaging 3.0 initiative.

Another highlight of Imaging 3.0 is case studies that spotlight radiologists who are already transitioning from focusing on the volume of scans read to the value of the patient experience. Fifteen case studies—including “Class Act,” summarized below—are currently available through the Imaging 3.0 website, with another 15 in the pipeline.

The “PERCS” of Participatory Learning

Imagine your 6-month-old patient’s parents are anxiously waiting in the next room. Ultrasound images confirm a tumor in their son’s liver. Now you must convey the bad news. You walk into the room, readying yourself to pass on the difficult information. The parents look up at you expectantly as you walk in. However, these aren’t actual parents, and there is no son with a liver tumor. It’s only a simulation.

The nervous people in the next room are professional actors who specialize in improvising. They are trained to respond to various medical scenarios. They are part of an innovative workshop offered by the Program to Enhance Relational and Communications Skills (PERCS) — held at Boston Children’s Hospital (BCH) to teach radiologists and other practitioners how to communicate effectively with patients and their loved ones.

Few doubt the importance of teaching interpersonal and communication skills to healthcare professionals. These critical skills are core ACGME competencies mandated for radiology residents. However, traditional instruction through lectures and readings “place learners in a passive mode, merely absorbing information,” wrote two PERCS participants in the December 2012 issue of Academic Radiology.

While simulation has become commonplace in medicine, it is mainly used for practicing technical skills. “Usually, simulation focuses on procedural learning with mannequins,” said Elaine C. Meyer, Ph.D., R.N., director of BCH’s Institute for Professional Actors who specialize in improvisation. “We use improvisational actors,” said Dr. Meyer, noting that actors do not read off scripts but are prepared to respond the way a patient or family member would. Consequently, “professionals are trained to make [the situations] not too easy, but also not too hard,” Meyer said. “They hit a sweet spot where something is challenging but can still be mastered.”

For more tips on patient discussions about bad news, medical errors, and radiation risk, read the full case study at ACR.org/Advocacy/Economics-Health-Policy/Imaging-3/Case-Studies/Class-Act.

MARY HENDERSON, a writer based in Bloomington, Ind., specializing in health and medicine, and ALYSSA MARTINO, a freelance writer, contributed to this story.

RSNA’s Radiology Cares Offers Roster of Resources

Radiology Cares: The Art of Patient-Centered Practice (RadiologyCares.org) features a wide variety of resources to help imaging professionals bring the patient-centered concept to their practice, including:

• Education Toolkit: Your index to literature about the patient-centered movement from experts, scientific journals, medical trade publications and mainstream consumer media.

• Presentation Toolkit: Customizable PowerPoint presentation decks will help you convey the importance of being patient-centered to your colleagues and communities.

• RadiologyCares.org: An invaluable resource for patient information and communication offering comprehensive information on radiology procedures, treatments and therapies.

Contact: RadiologyCares@rsna.org with questions/comments about the campaign or to share your patient-centered activities.

Take the Pledge: “Take the Pledge” to communicate more effectively with your patients and you’ll receive a certificate to display in your office.

Video Library: Produced by RSNA as well as other organizations, the growing video library includes a sample welcome video from a radiology practice and entertaining shorts on the power of empathy and how radiologists can impact the lives of their patients.

Meyer and a hired performing arts consultant screen, prepare and educate the actors around particular patient or family character. “We use improvisational actors,” said Dr. Meyer, noting that actors do not read off scripts but are prepared to respond the way a patient or family member would. Consequently, “professionals are trained to make [the situations] not too easy, but also not too hard,” Meyer said. “They hit a sweet spot where something is challenging but can still be mastered.”

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RSNA and ACR have established resource-rich programs, Radiology Cares™ and Imaging 3.0™, respectively, focused on high-value, patient-centered care. Top left: One of ACR’s Imaging 3.0 case studies features a hospital that trains its physicians using professional actors prepared to respond to various medical scenarios; right: as part of the Radiology Cares video library of resources, interventional radiologist Hector Ferral, M.D., and patient Sofia Daza, chat during a recent consultation.

(ACR Image courtesy of Stephen D. Brown, M.D., Boston Children’s Hospital.)
Video Glasses Cut Patient Anxiety in IR Procedures

BY PAUL LaTOUR

Video glasses worn by patients undergoing interventional radiology (IR) procedures help reduce anxiety without causing interference to medical staff, new research shows.

Patients wearing video glasses showing television or movies were 18.1 percent less anxious after their IR procedures than before, while those who didn’t wear the glasses were only 7.5 percent less anxious, according to research conducted at the University of Rochester Medical Center, Rochester, N.Y.

“Anxiety is a huge problem for people undergoing interventional procedures,” said lead author David Waldman, M.D., Ph.D., professor and chair of the Department of Imaging Sciences at the University of Rochester Medical Center. “Basically, we’re doing minimally invasive surgery on these people, so they are anxious. Decreasing anxiety levels is important.”

“Also, if you consider where medicine is going—to patient/family-centered care—clearly this technique is moving in that direction,” he added. “If we can make patients more comfortable while they are in the hospital, we are offering better care.”

Researchers selected 49 patients (33 men, 16 women, ages ranging 18-87) who were undergoing a variety of outpatient IR procedures at Strong Memorial Hospital, a facility within the university’s system. Of those, 25 used the video glasses and 24 did not. Subjects were required to complete a standard, 20-question State-Trait Anxiety Inventory Form before and after their procedures to assess their anxiety level. Scores ranging from 20 to 80 with a score of 43 or more were considered as significant larger amounts of sedation and analgesic medications during their procedures, said co-author Adam Fang, M.D., a third-year radiology resident in the Department of Imaging Sciences.

“We think this technique can be used to reduce anxiety and actually be applied safely in a variety of IR procedures without disturbing the physician or support staff,” Dr. Fang said. “It can be used to improve the patient experience and overall satisfaction.”

Patients in the study were undergoing a variety of IR procedures, allowing researchers to also monitor whether the glasses would be a disturbance to medical staff. “We didn’t pick any one type of procedure—we looked at a gamut,” Dr. Waldman said. “The glasses not only lowered the anxiety of the patients, they also were not obtrusive to the physician.”

The glasses also had no effect on patients’ average blood pressure, heart rate, respiratory rate, pain, procedure time or amount of sedation or pain medication, he said.

“The glasses not only lowered the anxiety of the patients, they also were not obtrusive to the physician,” Dr. Waldman said.

“T.V., Movies Offer Pleasant Distraction”

The setup is relatively simple. An SD card loaded with a particular title slides into the eyewear, which is not much larger than a pair of sunglasses. Patients were able to choose from 20 titles in the video library including National Geographic specials and family-oriented movies.

“Video glasses are an effective distraction technique that helps focus the individual’s attention away from the treatment.”

DAVID WALDMAN, M.D., PH.D.

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PAUL LaTOUR is an RSNA News staff writer.

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Combined Residencies Energize Nuclear Medicine Job Outlook

BY MIKE BASSETT

Nuclear medicine residents—particularly international medical graduates without diagnostic radiology training—continue to face a lack of opportunities on the job front, according to experts.

Although the issue is multifaceted, a key problem is that graduates whose background is in nuclear medicine only are becoming less attractive to radiology practices because they lack sufficient training in diagnostic radiology, said Milton J. Guiberteau, M.D., who assumes the presidency of the American Board of Radiology (ABR) on July 1, 2014.

"Candidates with both nuclear radiology/nuclear medicine and diagnostic radiology training are much more attractive to practices because they not only know nuclear medicine, they can also help cover night call, weekends and other areas of the practice," said Dr. Guiberteau, chief of nuclear medicine and academic chief, Department of Medical Imaging, St. Joseph Medical Center, Houston, and a professor of radiology and nuclear medicine at Baylor College of Medicine, Texas Medical Center, Houston.

A 2013 survey of 54 nuclear medicine program directors published in the Journal of the American College of Radiology found that close to one-third of nuclear medicine residents were not yet working in the field the first eight months after completing their programs. International nuclear medicine graduates fared the worst among all candidates, the survey found.
Developing Countries in Dire Need of Radiology Training

BY FELICIA DECHTER

Radiologists in crisis-affected, vulnerable countries grappling with substantially unmet imaging needs are desperate for global outreach programs to help meet those deficiencies.

That was the finding of a survey of radiologists in developing countries across Asia, Europe and South America, assessing imaging needs and seeking input on the most effective ways to improve the situation. The survey was conducted by Bhavya Rehani, M.D., a clinical assistant in neuroradiology at Massachusetts General Hospital in Boston, as part of research presented at RSNA 2013, “Radiology Imaging around the World: Better Global Survey of Radiologists in 10 Countries.”

“Our survey shows the immense need for radiology and formal training programs in developing countries,” Dr. Rehani said. “Although humanitarian teleradiology has been recently given emphasis and offers hope, high demand may limit use due to lack of sustainability. Our results show that the focus should be on creating innovative interactive online teaching modules and building training programs.”

Seeking input on their imaging needs, Dr. Rehani sent a standardized online questionnaire to 26 radiologists from 18 nations across the world. To choose which countries to survey, Dr. Rehani based her selection on the International Monetary Fund’s World Economic Outlook Report, April 2012, and World Bank data. Radiologists from Belarus, Sri Lanka, Thailand, Burma, Macedonia, Costa Rica, Czech Republic, Lithuania, Tanzania, Slovenia and Serbia responded.

“The need for more radiology residency training programs in their respective countries was expressed by 88 percent of the radiologists in our survey,” Dr. Rehani said. “A total of 96 percent of the radiologists expressed need for more subspecialty training in their country.”

A sample question on radiation safety knowledge revealed the critical need for better training. Respondents were asked: “If a patient underwent a chest CT and plain abdomen X-ray in the last two weeks and has been found to be pregnant now, will you ask for termination of pregnancy?”

“The correct answer is ‘No’ as this is very a small dose to ask for termination of pregnancy.” Dr. Rehani said. “However, multiple anonymous responses answered: ‘Yes.’ Thirty percent of radiologists responded that they don’t have availability of colleagues who can provide advice on radiation dose and radiation risk issues. This shows further light on the need for more radiation safety training globally.”

“Given the immense unmet imaging needs, our survey helped us prioritize and triage the areas of most weakness, so that we can specifically focus our efforts on those areas for maximum impact,” Dr. Rehani said.

RAD-AID Assesses Radiology Readiness

Along with data assessment, surveys such as Dr. Rehani’s are vital for properly designing global health outreach efforts, said Daniel Mollura, M.D., founder of the Washington D.C.-based RAD-AID International, a nonprofit organization dedicated to increasing international radiology services in developing countries and optimizing radiology for public health initiatives.

RAD-AID developed a comprehensive multifaceted assessment tool, “Radiology-Readiness,” to assess needs and strategies for proper designing radiology in resource-limited regions.

“Because imaging capabilities and needs are as diverse as the countries in which we have partners, a ‘one size fits all’ approach to medical imaging outreach—such as that used with large capital equipment donation—is not clinically practicable or cost-effective,” Dr. Mollura said. “Instead, the Radiology-Readiness assessment is invaluable in ensuring that the right collaborative medical imaging program is put in place and that sustainable implementation is possible, and eventually, scalable.”

“The need for more radiology residency training programs in their respective countries was expressed by 88 percent of the radiologists in our survey.”

RHANI

RAD-AID.—Breaking ground in Indonesia

RAD-AID, a nonprofit organization at Northwestern University’s Feinberg School of Medicine, has received a Champions of Action Plenary Session Award of the Clinton Global Initiative for its innovative women’s health outreach program in Chandigarh.

“Since 2012, our team of radiologists, technologists and local partners have screened more than 4,000 women in our mobile health van for osteoporosis, breast and cervical cancer—three of the biggest public health needs facing impoverished women in Northern India,” Dr. Mollura said.

Another example of the organization’s work has been filling the need for digital imaging solutions in Africa, which led to RAD-AID’s implementation of PACS in Kole Bu Hospital of Ghana, Dr. Mollura said.

When an assessment revealed a need for radiology technician education and educational loan finance in Kenya, the organization partnered with the Deutsche Bank Foundation and Kenya Medical Training College to begin structuring educational tracks for technologists. WHO-endorsed training in Kenya via RAD-AID’s team was set to begin in June 2014, Dr. Mollura said.

Additionally, Radiology-Readiness assessments have guided RAD-AID’s program in Haiti, mainly in terms of education and clinical aid for hospitals rebuilding after the 2010 earthquake. As a result, the American Medical Association awarded the organization the Community Service Award in 2013 with the following quote: “Our governing council was thoroughly impressed with the impact of RAD-AID on the global practice of radiology and medical imaging outreach.”

“The key is to empower radiologists locally for long-term sustainability rather than short-term solutions,” Dr. Rehani said. “The more radiologists who can join hands in helping colleagues in developing countries the better.”

RSNA IVP Program Offers Personal Interaction

RSNA helps meet training and resource needs throughout the world with its International Visiting Professor program. IVP teams comprising North American professors have traveled to 45 developing nations to lecture at radiology meetings and work one-on-one with radiology residents in local hospitals. Professors and radiologists in the countries visited all call the experiences “eye opening,” “useful” and “exciting.”

Among those who have served in the IVP program is Teresita L. Angtuaco, M.D., a professor of radiology and director of the Division of Imaging at the University of Arkansas for Medical Sciences and now chair of RSNA’s Committee on International Readiness (CIRE). During Dr. Angtuaco’s visit to Thailand in 2010, the IVP group was asked to help improve the country’s seven radiology residency programs. She noted that all seven of the country’s residency program directors were in attendance at meetings and were eager to learn from their North American counterparts.

“Interactive relationships are the most important things we can offer in our education programs,” she said.

RSNA Travels to Brazil for JPR 2014

As part of RSNA’s partnership with the Radiological and Diagnostic Imaging Society of São Paulo (SPR) the RSNA booth traveled to Brazil for the 44th Jornada Paulista de Radiologia (JPR) in May. In August, RSNA News will feature photos and a report on the meeting that drew more than 5,000 attendees.

More than 30 RSNA speakers, including five members of the 2014 RSNA Board of Directors, lectured at dozens of sessions throughout the week. Later this year, the RSNA Booth will travel to:

- Cartagena, Colombia—InterAmerican College of Radiology (ICIR), August 15-17
- Kazakhstan—Congress of Radiology (KZCR), September 24-28
- Seoul, Korea—Korean Society of Radiology (KSR), October 8-11
- Paris, France—French Society of Radiology (SFR), October 16-20

Rehani

Mollura

Left: As part of the RAD-AID’s ASHA Jyoti Women’s Health Program in Northern India, teams of imaging professionals in a mobile health van screen women for osteoporosis and breast and cervical cancer; right: In Haiti, Alexandra Fairchild, M.D., a second-year radiology resident from Brigham and Women’s Hospital, offers an iPad to entertain a young patient waiting for a CT scan. A visiting pediatric surgeon was able to remove a renal mass revealed by ultrasound and CT.

For more information on RAD-AID—including exploring volunteer opportunities—go to RAD-AID.org. Those with questions or concerns can contact info@rad-aid.org.

WEB EXTRAS

For more information on RSNA’s international education programs, go to RSNA.org/International.
Breast imagers defend mammography in wake of new study

BY RICHARD DARGAN

Recent research questioning the value of mammography in reducing deaths from breast cancer for women in their 40s and 50s has reignited a long-running debate over the value of routine screening. Noted breast imagers and national radiology organizations strongly dispute the findings and contend that the study’s conclusions are based on flawed research.

The Canadian National Breast Screening Study (CNBSS) study, published online Feb. 11 in The British Medical Journal, is a 25-year follow-up of nearly 90,000 Canadian women, ages 40 to 59. Researchers compared outcomes in women who underwent screening mammography with those who didn’t and found that the cumulative mortality from breast cancer was similar between the two groups and that screening did not reduce breast cancer death beyond the effects of physical exams or usual care from their doctor. These results echo the preliminary findings of the CNBSS published in the 1990s.

“We were initially surprised by the results of the first report, and as we continued to follow the women we thought we might see a favorable impact for mammography later on,” said principal investigator Anthony B. Miller, M.D., professor emeritus at the Dalla Lana School of Public Health at the University of Toronto. “But 16 years later, we continue to see the same long-term effect.”

Dr. Miller and colleagues randomly assigned patients to the mammography or control group. Those in the mammography group had a mammogram every five years for the study period, and the control group was not screened. Women ages 46–49 in the mammogram group and women ages 50–59 in both groups also received annual clinical breast exams. Women ages 49–49 in the control group received one clinical breast exam and typical care from their doctor. After five years, women in the study received care from their regular doctor, which could include mammograms at their doctor’s discretion.

“During the five-year screening period, 666 invasive breast cancers were diagnosed in the mammography group (nearly three-fourths of them detected through screening), with 180 of those cancers becoming fatal within 25 years. In the control group, 524 invasive breast cancers were diagnosed—775 of them fatal within 25 years. Because more cancers were diagnosed by mammography but essentially the same number of women died of breast cancer, researchers concluded that mammography was overdiagnosing breast cancer and they recommended that annual breast cancer screening through mammograms be reevaluated. Experts say research deeply flawed

Many in the breast imaging community view the new research as deeply flawed and say it raises the same problems as the results of the first study published in the 1990s. Deficiencies cited include the study design, the quality of the mammograms and the lack of training in those who performed and interpreted the images. “It’s deja vu all over again,” said Gary J. Whitman, M.D., professor at the University of Texas M.D. Anderson Cancer Center in Houston and a member of the Breast Imaging Subcommittee of the RSNA Scientific Program Committee and the Public Information Committee. “The whole point of screening mammography is to detect breast cancer before it’s palpable,” Dr. Copit said. “In this study, 68.2 percent of cancers found in the group screened with mammography were palpable, which tells us that the study was flawed.”

In response to the criticism, Dr. Miller noted that two U.S. epidemiologists endorsed the study design. He disputed the contention that women with advanced cancer were included in the mammography arm of the study but not the control arm and defended the quality of the mammograms.

But Dr. Copit pointed out that the mammograms used in the study did not include the more expansive mediolateral oblique view and that patients didn’t receive yearly mammograms. “Despite excellent follow-up, they didn’t do correct views or screen every year,” she said. “Therefore, the conclusions are difficult to interpret or validate.”

Dr. Miller responds. “In fact we did screen every year, and the views we used were standard in North America in 1980 when we started the trial,” he said. “We changed to include the mediolateral oblique view in 1984 from the previously standard mediolateral view, with the craniocaudal view used as well throughout.”

Research backs regular mammography screenings

The Canadian study has enlivened an argument over mammography that has been ongoing since screening recommendations first came into focus in the 1980s. Early guidelines grew out of results from large, randomized control trials that tied mammography to a significant reduction in breast cancer-related mortality, including the Two-County Study of more than 130,000 women that began in Sweden in 1977. Swedish researchers found a 31 percent decrease in mortality among women from the group who were screened compared with those who had no screening.

That study, which began in 1976, provides more useful data on screening mammography, according to Mary C. Mahoney, M.D., professor of radiology at the University of Cincinnati Medical Center and director of Breast Imaging at Cincinnati Children’s Hospital Medical Center. Dr. Mahoney serves as the RSNA Board Liaison for Publications and Communications.

“The Two-County study was better designed and more truly randomized than the Canadian study,” Dr. Mahoney said. Based on results from the Two-County study and other research, the American Cancer Society recommends annual screening for women aged 40. Other groups, like the U.S. Preventive Services Task Force and the Canadian Cancer Society, say screening should start at age 50 and take place once every two years instead of annually.

Those recommendations are counterintuitive, according to Dr. Copit, a breast cancer survivor whose cancer was detected by mammography when she was in her forties. “Women in their forties tend to have faster-growing cancers,” she said. “They need to be screened more often, not less often.”

In addition, earlier detection usually requires less aggressive treatment that is better tolerated by patients, according to Dr. Mahoney.

Mammography scrutiny likely to continue

The recurring argument over screening is not likely to abate anytime soon, even with improvements in technology like tomosynthesis and the addition of supplemental imaging with ultrasound and MR in women with mammographically dense breasts.

“Mammography comes up often as healthcare gets tighter and tighter and people start looking for places to cut back,” Dr. Copit said. “There seems to be a persistent group of researchers who are opposed to mammography.” Dr. Mahoney added. “I can’t name one other test that has undergone the rigor that mammography has.”

Breast imaging experts do not expect the Canadian study to impact existing screening recommendations or insurance coverage. In the U.S., most states mandate coverage for regular screenings for women 40 and older and laws would require action by state legislators to be changed.

“There are good data showing that screening mammography decreases mortality for patients 40 to 49, as well as those ages 50 to 59,” Dr. Whitman said. Most major organizations recommend annual screening, and over time as we get more follow-up data, the research supporting it will become even stronger.”

“It’s clear to me, after 20 years of practice, that we should start screening at age 40 and continue every year,” Dr. Copit said. “A more interesting question is, at what age do we stop screening?”

Richard Dargan is a writer based in Albuquerque N.M., specializing in healthcare issues.
Individual Donors

Donors who give $1,500 or more per year qualify for the RSNA Presidents Circle. Their names are shown in bold face.

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*Michael C. Brunner, M.D., of Madison, Wis., worked with Tom Shimala as chair of the RSNA Technical Exhibits Committee from 2006 to 2007. In that process I learned that an optimal model for leading medical societies consists of trust and true partnership between very professional staff and volunteer leadership.”* 

Tom Shimala, 24 years

Tom Shimla came to RSNA in May 1990 after several years with the American Dental Association and Chicago Dental Society. Initially working as director of advertising, Shimla has served the Society in expanded positions including associate director, finally culminating in his appointment as director of technical exhibits in 2003. During Shimla’s time as director, the Society has worked with 600 to 700 exhibiting companies each year, with booths ranging from 100 to thousands of square feet. Many companies have maintained a presence at the RSNA annual meeting; however, each year also sees as many as 100 exhibiting for the first time. Shimla has overseen efforts to welcome newcomers as well as increase opportunities for all industry representatives to interact with medical professionals.

Shimla has been lauded by exhibitors and peers alike for his magnetic personality. In an interview with Trade Show Executive magazine published in October 2012, he attributed his success to his dedicated staff and RSNA’s relationship with its meeting general contractor. “And living by my motto, ‘be prepared,’” he added. “Tom is the consummate professional with an abundance of quality attributes, not the least of which is his photographic memory, a tool that has served him well throughout his career. His contributions will be missed, especially his fun and energetic personality,” said Steven T. Drew, RSNA Assistant Executive Director for the Scientific Affairs and Communications.

Michael C. Brunner, M.D., of Madison, Wis., worked with Shimla as chair of the RSNA Technical Exhibits Committee from 2006 to 2007. “In that process I learned an optimal model for leading medical societies consists of trust and true partnership between very professional staff and volunteer leadership,” Dr. Brunner said. Tom’s words are a strong indication of the reason he’s worth of a leader for RSNA and SIR and throughout my professional career.”

RSNRF.jpg

your donations in action

Beyond Black and White: Color Enhanced Multi- Material Decomposition of Complementary Contrast of Dual-energy CT Scanning (DECT)

In dual-energy computed tomography (DECT) technology, the next logical step is to extend the dual contrast DECT technique to human subjects and develop novel algorithms that can better visualize and differentiate tissue types.

RSNA Research Medical Student Grant recipient and doctoral candidate Margaret Wong, B.S., M.Eng., under the scientific guidance of past Research Seed Grant recipient Benjamin V. Yeh, M.D., professor of radiology at University of California, San Francisco, has optimized dual energy CT software to allow vessel separation and display of three different materials and soft tissue.

“Multi-colored contrast decompositions are a superior way to appreciate the rich information obtained at dual contrast DECT scanning,” Wong said. “We showed that, when compared to grayscale two- and three-material decomposition, the addition of novel sub-models with material decomposition substantially improved reader confidence, speed and quality of material separation when viewed in conjunction with conventional CT images. We also showed that our novel three-material decomposition algorithm can quantitatively measure concentration contrast.”

“Potentially, this technique could lead to improved detection of disease, amplify the diagnostic capability of multiphase dual-energy CT scans from a multi-scan CT, and aid in the differentiation of atherosclerotic versus intravascular contrast. Dr. Yeh said. “Studies are currently underway to further develop color CT, multi-contrast imaging and using urgently needed contrast materials with less toxicity.”

Your donations in action

In a ribbon with iodized IV, novel tungsten PO, and gadolinium injected in the bladder. All contrast appears white or gray in conventional CT (left). In comparison, the three contrast materials are clearly differentiated in the color-enhanced DECT (right). The stark yellow of the gadolinium in the bladder is easily differentiated from the green bismuth in the stomach and bowel. Iodinated contrast material has been administered via the nasogastric tube, bowel wall and hepatic parenchyma. Soft tissue is displayed in blue.

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**RSNA 2014 Registration**

**HOW TO REGISTER**

There are two ways to register for RSNA 2014:

1. **INTERNET**
   - Visit [RSNA.org/register](http://RSNA.org/register)

2. **TELEPHONE**
   - Call 1-800-650-7018
   - Mon–Fri, 8 a.m.–6 p.m. CT
   - 1-847-996-5862

**Registration Fees**

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**RSNA 2014 Guarantee Your Seat!**

Tickets are required for various meeting components, including refreshers, multisession, informatics workshops and RSNA tours and events. All ticketed courses must be confirmed prior to November 27 to guarantee a seat. RSNA ticketed courses fill up fast, so before you get the courses you need by enrolling at RSNA.org/register. There is no onsite course ticketing. Registrants without tickets will be allowed entrance into a course after all ticketed registrants have been seated.

**RSNA 2014 Book Your Room Now With RSNA Housing System**

Top Reasons Why You Should Reserve Your Hotel Rooms via the RSNA Housing System:

1. **Lowest rates.** Eighty-four hotels in the heart of the city offering a wide range of options and price points and the lowest rates possible.

2. **Free transportation.** Free Metra train service to the Randolph Street Station as well as shuttle bus service between all 84 hotels and McCormick Place.

3. **Flexible terms (New this year).** Unlike online travel agencies that require prepaid stays or have restrictive penalties, RSNA has established flexible booking terms up to 72 hours prior to arrival.

4. **Customer Service.** RSNA is your advocate if a dispute or problem arises and is available to assist with housing questions or concerns.

5. **Supporting RSNA.** By booking through the RSNA Housing System, you are supporting the Society and creating cost benefits that are passed on to attendees. By avoiding attrition fees, RSNA is able to negotiate better deals on room rates.

6. **Easy booking.** The RSNA website offers one-click booking while providing a wide range of choices at different price points. Another advantage: No need to scour the Internet to find the best rates.

**Residents & Fellows Corner**

The RSNA Resident and Fellow Committee, chaired by Richard E. Sharpe Jr., M.D., M.B.A., met recently at RSNA headquarters in Oak Brook, Ill., to discuss many topics affecting the Society’s members in training.

**Next Symposium Subjects Announced**

The committee approved the topics for the Resident and Fellow Symposium to be held Wednesday, Dec. 3, during the RSNA annual meeting. Symposium seats can be reserved during RSNA 2014 Course Enrollment, starting July 9, using course codes MSRP41 and MSRP42. Topics include:

- **Career 101:** What Type of Job is Best for Me?
- **Career 201:** Career Essentials, From the Experts
- **Money Talk:** The Veil is Lifted
- **Candid:** Frank and Personal Job Advice from Recent Grads

**Handy Checklist Helps Trainees Manage Their Moves**

A moving checklist has been designed to help residents and fellows manage the many tasks associated with moving—such as updating information with healthcare providers and financial institutions and keeping identification such as driver’s licenses and passports in order—and starting a new training program or beginning practice. The checklist will be made available to residents and trainees in a number of ways including the Trainees area at the RSNA website at RSNA.org/Trainees.

**Check Position Postings on Fellowship Connect**

Fifty-nine institutions are now using RSNA Fellowship Connect to post available radiology fellowship positions, with 138 positions currently listed. Fellowship Connect can be found at fellowships.rsnanet.org.
Radiology in Public Focus
Press releases were sent to the medical news media for the following articles appearing in recent issues of Radiology.

Detection of Central White Matter Injury Underlying Vestibulopathy after Mild Traumatic Brain Injury

**Diffusion tensor imaging (DTI)** findings in patients with mild traumatic brain injury (TBI) and vestibulopathy support the hypothesis that posttraumatic vestibulopathy has a central axonal injury component, new research shows.

Lea M. Alldai, M.D., of the University of Pittsburgh Medical Center, and colleagues retrospectively reviewed DTI images in 30 patients with mild TBI and vestibular symptoms and 25 patients with mild TBI and ocular convergence insufficiency. Control subjects consisted of 39 patients with mild TBI without vestibular abnormalities and 17 patients with mild TBI and normal ocular convergence.

Fractional anisotropy (FA) maps were generated as a measure of white matter integrity and were analyzed with tract-based spatial statistics regression analysis by using a general linear model. DTI abnormalities were correlated with symptom severity, neurocognitive test scores and time to recovery with the Pearson correlation coefficient.

Patients with mild TBI and ocular convergence insufficiency have decreased FA in the right anterior thalamic radiation and right geniculate nucleus optic tracts compared with control subjects (P < 0.001), with anterior thalamic radiation injury showing a correlation with decreased processing speed (R = 0.402, P < 0.05).

“This has the potential to change the current clinical management of vestibulopathy in mild TBI, which previously looked both an understanding of the central component of the underlying injury, as well as biomarkers to aid in prognosis,” the authors write.

Intrinsic Brain Abnormalities in Attention Deficit Hyperactivity Disorder: A Resting-State Functional Magnetic Resonance Imaging Study

**Altered regional brain function** was detected in the prefrontal cortex and globus pallidus—as well as aberrant functional connectivity (FC) in large-scale networks—in children and adolescents with attention deficit hyperactivity disorder (ADHD), new research shows.

Fei Li, Ph.D., of West China Hospital of Sichuan University, and colleagues compared resting state functional magnetic resonance imaging (fMRI) results in 35 boys with ADHD, ages 6 to 16, with those of 32 similarly aged, healthy controls. Amplitude of low-frequency (rfMRI) results in 33 boys with ADHD, ages 6 to 16, with those of 32 similarly aged, healthy controls. Researchers determined the functional magnetic resonance index (p < 0.57 vs 0.47, respectively, P < 0.01). Major determinants of plaque in diabetic patients in addition to age and sex are BMI (P < 0.001) and duration of diabetes (P < 0.10). Researchers found no association of diabetes characteristics with small vessel ischemic disease in the brain.

“Our findings raise the possibility that cognitive changes arising in patients with diabetes might not be strongly related to microvascular abnormalities but to neurodegenerative disorders, such as Alzheimer disease,” the authors wrote.

Coronary Artery Plaque Volume and Obesity in Patients with Diabetes: The Factor-64 Study

In **asymptomatic diabetic patients**, body mass index (BMI) was the primary modifiable risk factor associated with total and soft coronary plaque as assessed with coronary CT angiography (CTA), according to new research.

In a study by Alan C. Kwan, B.A., National Institutes of Health Clinical Center, Bethesda, Md., and colleagues, 224 asymptomatic diabetic patients underwent coronary CTA. Total coronary artery wall volume in all three vessels was measured by using semiautomated software. Researchers determined the coronary artery plaque index (PVI) by dividing the wall volume by the coronal length.

Results showed that PVI in the proximal coronary arteries is more closely related to the calcium score than to the total coronary plaque index (r = 0.57 vs 0.47, respectively, P < 0.01). Major determinants of plaque in diabetic patients in addition to age and sex are BMI (P < 0.001) and duration of diabetes (P < 0.10). Researchers found no association of diabetes characteristics with small vessel ischemic disease in the brain.

“In this study supports reduction of BMI as a therapeutic goal to reduce cardiovascular risk in diabetic patients,” the authors wrote.

Effect of Diabetes on Brain Structure: The Action to Control Cardiovascular Risk in Diabetes MR Imaging Baseline Data

In the **diabetic population** of an Action to Control Cardiovascular Risk in Diabetes substudy, duration of diabetes and fasting plasma glucose (FPG) were associated with brain atrophy—specifically that of gray matter—but were not associated with greater ischemic lesion volumes, research shows.

In a study of 614 patients with type 2 diabetes, R. Nick Bryan, M.D., Ph.D., of the University of Pennsylvania, Philadelphia, and colleagues evaluated baseline severity by testing FPG, hemoglobin A1c levels and duration of diabetes. MR imaging was performed with fluid-attenuated inversion recovery sequences, T2-weighted and T1-weighted sequences, which were postprocessed with an automated computer algorithm classifying brain tissue as gray or white matter and as normal or ischemic.

Longer duration of diabetes was associated with lower gray matter volumes (r = 0.21), possibly reflecting direct neurologic insult; higher FPG levels showed similar associations with lower brain volumes (r = 0.20). Researchers found no association of diabetes characteristics with small vessel ischemic disease in the brain.

“Our findings raise the possibility that cognitive changes arising in patients with diabetes might not be strongly related to microvascular abnormalities but to neurodegenerative disorders, such as Alzheimer disease,” the authors wrote.

New on RadiologyInfo.org
Visit RadiologyInfo.org, the public information website produced by the RSNA and ACR, to read the latest content posted to the Disease/Conditions section on Breast Cancer.

**www.radiologyinfo.org/info.cfm?pm=breast-cancer**

Media Coverage of RSNA
In April, 739 RSNA-related news stories were tracked in the media. These stories reached an estimated 245 million people. Coverage included Time, Newsday, The Washington Post, MSNBC.com, CNN.com, FOX News.com, CBSNews.com, WebMD, KCAL-TV (Los Angeles) and WGN-TV (Chicago).

**JULY PUBLIC INFORMATION OUTREACH ACTIVITIES FOCUS ON ULTRASOUND**

In July, RSNA’s 60-Second Checkup radio program will focus on the use of ultrasound to detect suspected appendicitis in children.
The following are highlights from current issues of RSNA’s two peer-reviewed journals.

JOURNAL HIGHLIGHTS

Resting-state Functional MR Imaging: A New Window to the Brain

Resting-state (RS) functional MR imaging has proven to be a very rich source of brain connectivity data, which can be obtained within 10 minutes of scanning and offers an unprecedented new window into the brain. RS functional MR imaging identifies alterations in functional connectivity in many neurologic and psychiatric diseases, even in neonates and in patients with coma or dementia. In an article in the July issue of Radiology (RSNA.org/Radiology), Frederick Barkhof, M.D., Ph.D., of the Neuroscience Campus Amsterdam, VU University Medical Centre, the Netherlands, and colleagues discuss RS functional MR imaging in terms of:

- Data acquisition and analysis techniques
- Brain development and normal aging
- Consciousness, pain and anesthesia
- Drugs and addiction
- Dementia and neurodegenerative diseases
- Developmental disorders and psychiatry
- White matter disease

Although RS functional MR imaging is gaining substantial traction in the neuroscience community and several clinical applications are starting to emerge, “... better understanding of physiologic and pharmacologic effects and confounds are needed before clinical application can be established,” the authors conclude.

Methods for Clinical Evaluation of Noise Reduction Techniques in Abdominopelvic CT

Existing noise reduction strategies for dose reduction have a substantial impact on lowering the radiation dose at CT. To preserve the diagnostic benefit of CT, thoughtful utilization of these strategies must be based on the inherent lesion-to-background contrast and the anatomy of interest. In an article in the July-August issue of RadioGraphics (RSNA.org/RadioGraphics), Eric C. Elmam, M.D., of the Mayo Clinic, Rochester, Minn., and colleagues provide an overview of existing noise reduction strategies for low-dose abdominopelvic CT, including analytic reconstruction, image projection space denoising and iterative reconstruction. The authors also review quantitative and qualitative tools for evaluating these strategies and discuss the strengths and limitations of individual noise reduction methods.

Methods are needed for quantitating contrast-dependent spatial resolution, conducting observer performance studies for a variety of diagnostic tasks and developing tools to facilitate the rapid completion of these tasks and predicting the lowest dose that will allow adequate performance on specific CT systems, according to the authors.

The full impact of noise reduction techniques on radiation dose and radiologist performance is in the early phases of realization, with great potential to benefit patients by decreasing the radiation dose they receive while undergoing CT,” the authors write.

CME Credit Tracking Made Easy with the CME Gateway

CME Gateway—a tool developed by RSNA to help physicians track earned CME credits from multiple organizations in one central location—makes keeping track of your progress toward American Board of Radiology (ABR) Maintenance of Certification (MOC) easy.

Users can link their MyABR account to CME Gateway at www.cmegateway.org for automatic reporting of earned CME credits directly to ABR, eliminating the need to re-enter credits on the ABR website.

Users can register their CME Gateway account to link with any participating organization by inputting their society-specific user name and password. After that, users can link their MyABR account to CME Gateway for automatic reporting of credits to ABR. Users must be a member in good standing to successfully link to a participating society account with CME Gateway.

CME Gateway requests CME information by cross-referencing a member-specific user name and ID for each participating organization and compiling the data for easy retrieval. Users who have linked multiple society accounts will be able to view and generate aggregate reports of CME earned with participating institutions for easy tracking and record-keeping.

For free sign-up to CME Gateway and more information, go to www.cmegateway.org.

THE VALUE OF MEMBERSHIP

RSNA Scan 2013: Year in Review

The RSNA Scan 2013, a collection of the finest RSNA scientific and educational content from the previous year accessible on a portable USB device, allows users to take the best of RSNA with them anywhere.

The scan includes a cross-section of quality offerings from RSNA, including RSNA 2013 plenary sessions, Cases of the Day and award-winning education exhibits from the annual meeting. New this year: popular online refresher courses, most viewed online Cases of the Day and several RSNA 2013 Virtual Meeting courses.

Other highlights include:

- A selection of the most innovative and popular 2013 Radiology and RadioGraphics articles. Among them: Radiology features the Alexander R. Margulis Award-winning articles along with the accompanying RSNA 2013 video award presentations; RadioGraphics features the Magna Cum Laude-awarded RSNA 2013 education exhibits.
- Most viewed scientific abstracts—including the Science Trainee Research Prize—and popular education exhibits—including the Magna Cum Laude Award
- RSNA 2013 plenary sessions including the RSNA Image Interpretation Sessions, Annual Oration in Diagnostic Radiology, New Horizons Lecture, RSNA 2013 President’s Address and RSNA/AAPM Physics Symposium.
- Refresher courses on topics ranging from high-resolution CT to easily missed findings in emergency neuroradiology.
- The cost is $650 for members and $925 for non-members. Visit RSNA.org/RSNA_SCAN to see a complete list of items included in the scan, and add this education collection to your library.

This article meets the criteria for AMA PRA Category 1 Credit™

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RSNA/AUR/ARRS Introduction to Academic Radiology Program

Applications due: July 15, 2014

Sponsored by RSNA, the American Roentgen Ray Society (ARRS) and Association of University Radiologists (AUR), the Introduction to Academic Radiology program:
• Exposes second-year residents to academic radiology
• Demonstrates the importance of research in diagnostic radiology
• Illustrates the excitement of research careers
• Introduces residents to successful clinical radiology researchers

Successful applicants will be assigned to either a seminar held November 30–December 4, 2014, during the RSNA Scientific Assembly in Chicago, or the ARRS Scientific Meeting in Toronto, Canada, April 19–24, 2015.

More information and the nomination form for this program are available at RSNA.org/ITAR.

Final Call to Apply: RSNA Advanced Course in Grant Writing

Applications are now being accepted for this course designed to assist participants—generally junior faculty members in radiology, radiation oncology or nuclear medicine programs—prepare and submit a National Institutes of Health, National Sciences Foundation or equivalent grant application. The course, to be held at RSNA Headquarters in Oak Brook, IL, will consist of four two-day sessions: October 10–11, 2014; January 30–31, 2015; March 13–14, 2015; and May 1–2, 2015.

For more information and to download an application, go to RSNA.org/RGW.

Medical Meetings

July–September 2014

JULY 17-19
Association of Educators in Imaging and Radiologic Sciences (AEIRS), Annual Meeting, Providence, Rhode Island
www.aeirs.org

JULY 20-24
The American Association of Physicists in Medicine (AAPM), 56th Annual Meeting, Austin Convention Center, Austin, TX
www.aapm.org

AUGUST 10-12
The Association for Medical Imaging Management (AHRA), 42nd Annual Meeting and Exhibition, Gaylord National, Washington, DC
www ahraonline.org

AUGUST 15-17
Inter-American College of Radiology (CIR), Interamerican Congress of Radiology, Caragena, Columbia
www.wcir.org
*Part of the RSNA Bath

AUGUST 20-22
Canadian Association of Radiation Oncology (CARO), Canadian Organization of Medical Physicals (COMP), 2014 CARO Annual Scientific Meeting, Delta St. John’s Hotel & Conference Center, St. John’s, Newfoundland
www.caro-aro.ca

SEPTEMBER 4-6
Sociedad Mexicana de Radiología e Imagen/ Mexican Society of Radiology and Imaging (SMRI), XII Curso Anual de Ultrasonidos, 13th Annual Ultrasound Course, World Trade Center, Mexico City
www.smri.org.mx

SEPTEMBER 4-7
The Royal Australian and New Zealand College of Radiologists (RANZCR), Australasian College of Physical Scientists & Engineers in Medicine (ACPSEM), and Australian Institute of Radiography (AIR), 2014 Combined Scientific Meeting and Exhibition Centre, Australia
www.csni2014.com

SEPTEMBER 8-12
International Society of Radiology (ISR), 28th International Congress of Radiology (ICR), World Trade Center, Dubai
www.icr2014.org

SEPTEMBER 8-13
American Society of Emergency Radiology (ASER), Annual Scientific Meeting and Postgraduate Course, Nine Hotel, Portland, Oregon
www.aserad.org

Register now for IHE World Summit

IHE International will host its second annual IHE World Summit joining health IT stakeholders, thought leaders on standards, interoperability and electronic health records from around the world, from Sept. 11-15 at the Hilton in Chicago. The event will feature keynote addresses by health IT leaders and panel sessions for developers, implementers and users of health IT.

For information and to access the schedule, go to www.ihe.net/WorldSummit/

RSNA.org

Member Portal is Your Hub for RSNA Resources

It’s well known that RSNA membership has its benefits. Now access them even more readily with the member portal on the redesigned RSNA.org.

The RSNA member portal—accessible on the top menu bar above the search field—consolidates the resources members use most in one convenient location, including:

• Member Highlights: Access links to resources including the RSNA Annual Meeting, myRSNA® and journals pages.

• Member Resources: Your connection to a host of popular RSNA resources, including:

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R&E Foundation: Launch your research and education career with grant opportunities or make a gift to support radiologic research.

Grant Writing and Research Development Programs: Apply for workshops, programs and courses to help you develop grant writing skills and further your career in radiologic research.

In addition, colorful icons at the bottom of the page direct users to the RSNA annual meeting, myRSNA and educational offerings. Social media links are your resource for starting and joining conversations.

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Questions? Contact ed-ctr@rsna.org or call 1-630-571-2199 | Hours: 8:30 am - 4:30 pm CT Monday-Friday