

Visiting Professors Inspired by Resourcefulness of Myanmar Radiologists

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New Tools Help Radiologists Manage Pediatric Radiation Dose in CT

New Elastography Techniques Improve Thyroid Nodule Assessment

From Smartphones to Samurais, Radiologists Explore the Mobile Future

New Academy Poised to Create Radiology's Most Effective Leaders

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Editorial Fellowship for Trainees

RSNA has developed this editorial fellowship program as a benefit for trainees interested in scholarly publication and the editorial processes at medical journal offices.

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Deadline for applications is April 1, 2012.

Applications should include:

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 3. A faculty member

The Fellowship Experience

Trainee editorial fellows prepare evaluations and follow-up reports on their experiences during and as a result of the fellowship.

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For more than 20 years, *RSNA News* has provided high-quality, timely coverage of radiology research and education and critical issues facing the specialty, along with comprehensive information about RSNA programs, products and other member benefits.

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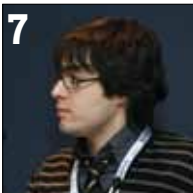
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ABR Addresses Media Scrutiny of Exam Security

The American Board of Radiology (ABR) has posted expanded information regarding exam security on its website, in light of CNN coverage that alleged cheating on ABR exams.

The CNN story, which aired in mid-January, detailed radiology residents' use of "recalled" questions to prepare for the exam. ABR Executive Director and 2009 RSNA President Gary J. Becker, M.D., said in an interview that ABR is increasing its exam security efforts, particularly in light of new exams debuting in 2013 and 2015. "ABR is replacing its proven and time-tested exam format, which includes an oral exam, with new, highly standardized computer-based exams that will be more objective and better able to assess the abilities of the physician examinees, without measuring extraneous factors not uncommon when candidates take the orals, such as nervousness," Dr. Becker told CNN.



A transcript of the story posted on the CNN website has drawn more than 1,300 comments, many from members of the public concerned about the qualifications of their radiologists. In response ABR has an Exam Security Statement on its website, addressing such issues as the role of the ABR and its requirement that every prospective examinee sign a document attesting to their understanding of ABR's Exam Security Policy, as well as the entire certification process. Read the statement at www.theabr.org.

Submit Nominations for Roentgen Awards

NOMINATIONS are being accepted for the RSNA Roentgen Research Award, recognizing trainees who have contributed significantly to advancing their departments through research as evidenced by presentations and publications of scientific papers, receipt of research grants or other contributions. Only one resident or fellow per department can be nominated by the program director or department chair.

The RSNA Research & Education (R&E) Foundation provides an award plaque for the department to display and a personalized award to present to the selected resident or fellow. The nomination deadline is April 1. Learn about the nomination process and see a list of past recipients at RSNA.org/Foundation/Roentgen.cfm.



Apply Now for RSNA Editorial Fellowships

Applications are being accepted for the RSNA Trainee Fellowship and Eyler Editorial Fellowship. The application deadline is May 1.

Both fellowships offer the opportunity to work with *Radiology* Editor Herbert Y. Kressel, M.D., in Boston and *RadioGraphics* Editor Jeffrey S. Klein, M.D., in Burlington, Vt. The Eyler fellowship lasts one month and trainee fellowship lasts one week. Each fellow will also visit the RSNA Publications and Communications Division at RSNA Headquarters in Oak Brook, Ill. The Eyler Fellow will work with the RSNA editorial team at RSNA 2012.

Learn more at RSNA.org/Publications/editorial_fellowships.cfm.

Numbers in the News

2.5

Percent of the gross domestic product of Myanmar spent on healthcare. Radiologists who recently visited the country as part of the RSNA International Visiting Professor Program got a firsthand look at the health-care needs and the motivation of many in the Southeast Asian country to improve the situation. [Read more on Page 11.](#)

6

Number of years after finishing residency that American Board of Radiology (ABR) candidates have to complete the initial ABR certification process, according to a new ABR policy. [Read more in Residents & Fellows Corner on Page 23.](#)

80

Percent of non-medical students who, when shown a set of CT slices, could not identify what point on the body the image represented. [Turn to Page 9 to learn how the SAM-RAY system, by integrating the iPad and Microsoft Kinect, gives patients a very hands-on elucidation of what "slices" represent in medical images. SAM-RAY is just one of many mobile devices and programs changing radiology work today.](#)

3,452

Number of participants in RSNA's first-ever Virtual Meeting, which allowed attendees to experience RSNA 2011 in a 2D/3D virtual environment. [Read more about the meeting's inaugural launch on Page 22.](#)

SCHAUER RECEIVES IMAGE GENTLY BUTTERFLY AWARD

Radiation expert **David Schauer, Sc.D.**, has received the Image Gently Butterfly award from the Alliance for Radiation Safety in Pediatric Imaging (ARSPI).

The award is presented to an individual or organization in or outside the alliance that makes a significant contribution to radiation protection for children. ARSPI launched the "Image Gently" campaign in 2009 to raise awareness of pediatric radiation safety and to lower radiation dose in the imaging of children.



Dr. Schauer, the executive director of the National Council on Radiation Protection and Measurements, was cited for his enthusiasm and support, particularly at the beginning of the campaign. Dr. Schauer is an adjunct associate professor of health physics at Georgetown University in Washington, D.C.

RSNA is among the 60 alliance organizations within ARSPI.

For more information on Image Gently, go to www.imagegently.org.



David Schauer, Sc.D., pictured with sons (left to right) **Zachary, Adam and Luke.**

Image courtesy of the Society of Pediatric Radiology

RSNA Facebook Page Nears 10,000th Fan

More and more RSNA members and others interested in the specialty are taking their conversations to RSNA's social media accounts on Facebook and Twitter. RSNA now has more than 9,900 fans on Facebook and more than 5,500 followers on Twitter.



Go to www.facebook.com/RSNAfans and www.twitter.com/RSNA to stay up-to-date on the latest in radiology and RSNA when you're on the go.

AAPM Issues Statement on Radiation Risks from Medical Imaging

The American Association of Physicists in Medicine (AAPM) recently issued a position statement concerning the safety of radiation in medical imaging procedures. AAPM stresses that risks associated with imaging and any medical procedure must be balanced with the benefits of that procedure.

"AAPM acknowledges that medical imaging procedures should be appropriate and conducted at the lowest radiation dose consistent with acquisition of the desired information. Discussion of risks related to radiation dose from medical imaging procedures should be accompanied by acknowledgment of the benefits of the procedures," according to the statement.

To read the entire statement, go to www.aapm.org.

Kaye Retires from Vanderbilt; University Searches for Replacement

Jeremy Kaye, M.D., chair of the Department of Radiology and Radiologic Sciences at Vanderbilt University Medical Center, will retire at the end of the current academic year in June 2012. The university is conducting a national search to fill the position.

Dr. Kaye, also the Carol D. and Henry P. Pendergrass Chair in Radiology, has been chair since 2007 after having served briefly as interim chair.

He served as department vice-chair from 2000 through 2006. Dr. Kaye, whose focus is musculoskeletal radiology, has more than 24 years of combined service to Vanderbilt.

Dr. Kaye has served as an associate editor for *Radiology* and a manuscript editor for *RadioGraphics*. He is a member of the RSNA-American College of Radiology Public Information Web Site Committee.



RadiologyInfo.org Wins Aesculapius Award

The RSNA-American College of Radiology jointly sponsored public information website *RadiologyInfo.org* recently received an Aesculapius Award of Excellence from the Health Improvement Institute. Aesculapius Awards are given to health-related websites and television/radio public service announcements (PSAs) that judges of the contest consider excellent in communicating health information to the public. The institute began recognizing health websites in 1997. *RadiologyInfo.org* previously received recognition from the Health Improvement Institute in 2005, 2008 and 2010.



RSNA Board of Directors Report

Before the 2011 Annual Meeting ended, the RSNA Board of Directors began looking ahead to programming for RSNA 2012 as well as other plans for the coming year.

Patients First

2012 RSNA President George S. Bisset III, M.D., has chosen a theme of “Patients First” for this year’s annual meeting. Expect programming focused on patient-centered care, including communicating with patients and providing dose-optimized imaging.

RSNA 2012 will see the return of two popular sessions that made their debut at the last annual meeting:

- A Spanish-language session will be offered on Saturday. RSNA 2011’s Imagen Oncologica: Sesión de Actualización del Colegio Interamericano de Radiología, or Oncologic Imaging: An Update from the Interamerican College of Radiology (CIR), was a series of presentations for the Spanish-speaking radiologic professional focused on topics such as key imaging findings in common neoplasms. Topics for this year’s program will be announced shortly.
- RSNA has expanded the number of sessions at RSNA 2012 that will use

Diagnosis LIVE! Technology. Diagnosis LIVE!, which drew great praise in its RSNA 2011 debut, allows participants to use their personal mobile devices in teams to test their knowledge in a fast-paced session that generates excitement and competitive spirit. Diagnosis LIVE! Sessions will be offered as part of the controversy sessions schedule and in some refresher course tracks this year.

Other controversy session topics at RSNA 2012 will include preoperative breast MRI, high relaxivity MR contrast agents and focal therapy for oligometastases. Also planned for RSNA 2012 is a mock jury trial involv-



N. Reed Dunnick, M.D.
Chairman, 2012 RSNA
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ing a case of overexposure to diagnostic ionizing radiation.

RSNA will dedicate the Annual Oration in Radiation Oncology at RSNA 2012 to the memory of Malcolm Bagshaw, M.D., of Stanford, Calif. Dr. Bagshaw died September 18, 2011, at the age of 86. He was known for helping to pioneer the use of high-energy radiation as produced by a medical linear accelerator in the treatment of head and neck cancer, pediatric tumors including retinoblastoma, gynecological cancer and prostate cancer.

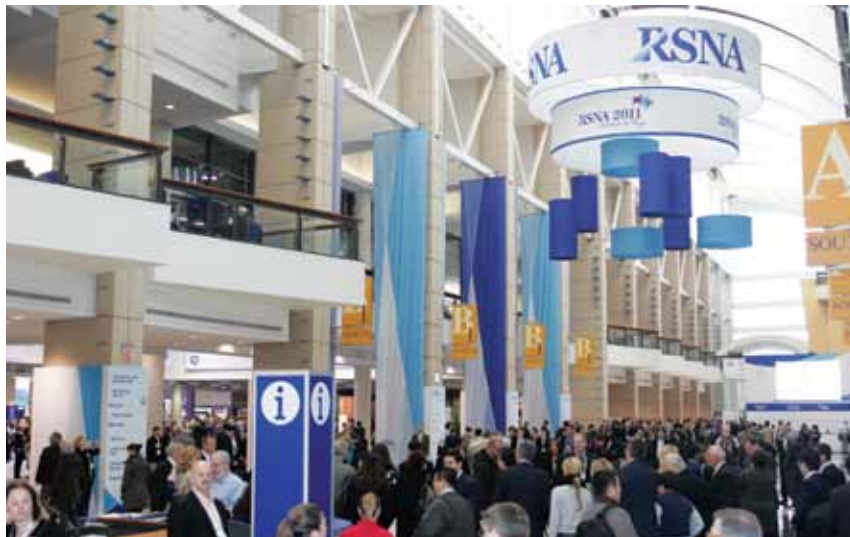
International Day of Radiology Planned

RSNA will cosponsor, along with the European Society of Radiology and the American College of Radiology, the first “International Day of Radiology” on Nov. 8, 2012. The RSNA Public Information Committee will help to plan activities and develop resources for the event. More details, including how you can participate, will appear in *RSNA News* throughout the year.

While the New Year brings some uncertainty in terms of healthcare reform, it also promises many exciting developments in the field of radiology and the RSNA. I look forward to sharing news about some of these innovative developments with you.

N. REED DUNNICK, M.D.

CHAIRMAN, 2012 RSNA BOARD OF DIRECTORS



Themed “Patients First,” RSNA 2012 will feature programming focusing on patient-centered care.

RSNA News

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My Turn

Globally Connected—Locally Owned

We have unprecedented capabilities to rapidly connect and share information and knowledge globally. But the reality is that four billion people on our planet still have no access to radiology services. Until recently, international radiology outreach efforts beyond individual efforts were relatively few and far between. Pioneers in global education and training outreach efforts include the Radiology Outreach Foundation and the Jefferson Ultrasound Research and Education Institute, to name just two.

Global outreach can take many forms: education and training through “boots on the ground” programs that aim to teach the teachers, access to web-based archives such as the International Society of Radiology (ISR) virtual journal “GO RAD,” global service networks like RAD AID and Imaging the World and focused fundraising efforts triggered by crises like the Haitian earthquake.

RSNA is the premier global radiology organization. Among its many facets is the Committee on International Relations and Education, which supports a wide variety of activities, such as international visiting professor programs. A summary of these outreach efforts that can be found at RSNA.org/International/CIRE/index.cfm.

An overview of the many radiology global outreach activities shows growing enthusiasm and efforts by the developed nations’ radiology communities towards medically under-resourced areas of the world. What is needed now is to coordinate these many efforts to minimize redundancy and maximize impact. We should align some of our efforts with those of the World Health Organization (WHO) and International Atomic Energy Agency (IAEA). The ISR has created a task force to identify and categorize current efforts to identify both duplication and assess unmet needs.

Although tremendous health disparities remain around the world, we are making progress in our efforts to level the health playing field, one kilobyte, one

air mile and one dollar at a time. I hope that many of you will feel motivated to contribute in your own way to these important efforts.

Eric J. Stern, M.D., is a professor of radiology, adjunct professor of medicine, medical education and bioinformatics and global health and vice-chair for academic affairs at the University of Washington. He is a special consulting international editor for the *American Journal of Roentgenology* and editor-in-chief of GO-RAD. Dr. Stern serves on the editorial board of the *RSNA Daily Bulletin*, RSNA’s Public Information Advisors Network (PIAN) and RSNA’s Education Committee.



Radiologist Places Second in Collegiate Inventors Competition

Christopher Brace, Ph.D., an assistant professor in the departments of radiology and biomedical engineering at the University of Wisconsin (UW), Madison, led a team of undergraduates to a second place win in the Collegiate Inventors Competition.

Developed through the Department of Biomedical Engineering’s undergraduate design curriculum, the winning invention, BarrierASAP, is a special, thermoreversible barrier used to protect healthy tissue while nearby cancer tissue is being removed. Team members included **Patrick Cassidy, Sean Heyrman, Alex Johnson** and **Anthony Sprangers**. Radiologist collaborators on the project were **Louis Hinshaw, M.D.**, and **Meghan Lubner, M.D.**



Image courtesy of the University of Wisconsin

University of Wisconsin team members with the winning invention: (left to right): Patrick Cassidy, Christopher Brace, Ph.D., Sean Heyrman, Louis Hinshaw, M.D., Alexander Johnson, Anthony Sprangers and Meghan Lubner, M.D.

Dr. Brace and colleagues presented the research, “Hydrodissection for Thermal Ablation: Development of Injectable Hydrogels to Increase Stability of the Insulating Layer,” at RSNA 2011.

The annual competition was founded by the non-profit organization Invent Now

to promote innovation, recognize young inventors and scientists and reward students for addressing the problems faced today.

New Tools Help Radiologists Manage Pediatric Radiation Dose in CT

Low-dose simulation and size-specific dose estimates (SSDE) are two tools shown to be effective in managing pediatric radiation dose, according to research presented at RSNA 2011.

RESEARCHERS who determined the optimal radiation dose in weight-based kilovolts (kV) technique charts for pediatric body CT discovered that a dose reduction of 30 to 50 percent at 100 and 120 kV can be achieved while maintaining clinically acceptable quality, said the study's lead author, Lifeng Yu, Ph.D., an assistant professor of radiologic physics at the Mayo Clinic in Rochester, Minn.

"If the intention is to reduce radiation dose, we have to keep in mind that we should not reach a point where we reduce radiation so low that diagnostic information is affected," he said.

The team created and validated a low-dose tool designed to simulate images with 30, 50 and 70 percent of the original dose level for the 102 clinically indicated pediatric chest and abdominal CT exams used in the retrospective study.

"Simulation tools are useful because a radiologist can actually perform virtual scans," said Cynthia McCollough, Ph.D., a professor of radiologic physics at Mayo and the project's senior author. "Radiologists don't want to miss an important diagnosis, but they are also trying to dial down the dose. This tool allows them to test how low they can go."



(clockwise) Marilyn Goske, M.D., Ph.D.; Lifeng Yu, Ph.D.; Cynthia McCollough, Ph.D.

RSNA 2011 Lecture Looks at Dose Headlines and Hype

Overall, radiologists should use discretion when considering estimates for radiation-associated cancer risk, because predictions are speculative, hypothetical, and often misleading, according to the presenter of a Special Lecture at RSNA 2011.

Take, for example, these headlines: "CT Scan Radiation May Lead to 29,000 Cancers, Researchers Warn." "One in 270 Women Who Undergo CT Coronary Angiography will Develop Cancer from the CT Scan."

"What is not said in those various predictions is that they're often based on a very small estimate of risk multiplied by a large number of people getting imaging procedures—which yields many hypothetical cancers," said William R. Hendee, Ph.D., Distinguished Professor of Radiology, Radiation Oncology, Biophysics, and Community and Public Health at the Medical College of Wisconsin. "What's not explained is just how speculative that risk is for many reasons."

Sources of data on human radiation effects include the Radiation Effects Research Foundation's study of Japanese

A-bomb survivors, populations near nuclear facilities, Three Mile Island and Chernobyl, medically exposed populations and natural background studies, Dr. Hendee said. "None of these events documents the low dose we typically employ in medical imaging," he said. "The problem is we're not dealing with a few hundred milliSieverts, we're dealing with a few milliSieverts."

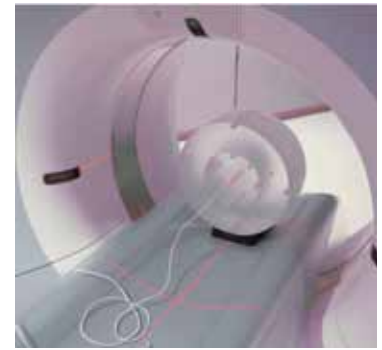
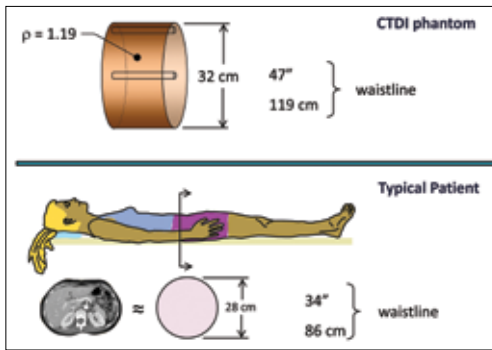
Carcinogen Claims Refuted

Illustrative, said Dr. Hendee, is the story of how Hermann Mueller's "linear no-threshold" model in the 1920s on the genetic effects of X-rays was adapted by the BEIR study in 1956 to examine potential genetic effects on the children of Japanese A-bomb survivors. "At the time, the most feared effect was mutagenesis, abnormalities in the survivors'

There is a need for a simple dose estimate for pediatric patients

- Local quality improvement
- Dose index registries (ACR)
- California law

* California law SB 1237



A California law that will require radiologists to include a radiation dose index in every patient's report is among the reasons outlined in the PowerPoint, left, explaining why size-specific dose estimates are necessary, presented by Marilyn J. Goske, M.D., Ph.D., and colleagues at RSNA 2011. Center: An illustration shows the marked difference in the patient's size, shape and tissue composition compared to an acrylic phantom, which leads to inaccuracies, according to researchers. Right: CT dose index is commonly measured for CT scanners and is reported on the CT console for set techniques.

Size-specific Dose Estimates Based on Patient's Size

Presenters with the American Association of Physicists in Medicine Task Group 204, co-chaired by John Boone, Ph.D., and Keith Strauss, M.Sc., developed easy-to-use tables that can be applied to the displayed volume CT dose index (CTDIvol), which allows radiologists to easily estimate patient dose for children and small adults. Researchers were able to estimate dose for different sized patients to within approximately 10 to 20 percent, either before or after the scan.

"CTDIvol is a measure of dose to a phantom, not to a patient," said Marilyn Goske, M.D., a pediatric radiologist at Cincinnati Children's Hospital Medical Center and head of the Image Gently team for the Alliance for Radiation Safety in Pediatric Imaging. Size-specific dose estimates allow users to estimate pediatric patient doses based on body size, she said.

Dr. Goske led the effort to establish the first national pediatric dose registry—a project funded through a 2009-2011 RSNA Research & Education (R&E) Foundation Education Scholar Grant sup-

ported by the Derek Harwood-Nash grant endowment and Harvey and Jean Picker.

Better dose estimates are needed, Dr. Goske said, for three main reasons: parents and patients are increasingly asking about estimated levels of radiation dose; estimates of patient dose must be tracked as radiology moves toward national registries; and radiologists in some parts of the country—particularly California—are being asked to include a patient's estimated radiation dose in his or her medical record.

"This measure can help with all three of those things," Dr. Goske said. "The final gold standard is going to be specific organ doses for patients, but that's at least five years away. This is an improvement over CTDIvol." □

“Simulation tools are useful because a radiologist can actually perform virtual scans.”

Cynthia McCollough, Ph.D.

WEB EXTRAS

☑ To read the 2011 American Association of Physicists in Medicine Report No. 4, Size Specific Dose Estimates in Pediatric and Adult Body Examinations, go to www.aapm.org/pubs/reports/RPT_204.pdf

☑ To watch videos of Drs. Marilyn Goske, M.D., Ph.D., Lifeng Yu, Ph.D., and Cynthia McCollough, Ph.D., discussing their RSNA 2011 research, go to rsnanews.RSNA.org.

offspring," Dr. Hendee said. "Later it was determined that the effects did not result in mutagenesis but in carcinogenesis."

A study in the April 2009 issue of *Radiology* by Tubiana et al., pointed out, however, that among humans, there is no evidence of a carcinogenic effect for acute irradiation at doses less than 100 mSv or for protracted irradiation of doses less than 500 mSv, Dr. Hendee said. "The authors concluded that fears associated with the concept of linear no-threshold—and the idea that any dose, even the smallest, is carcinogenic—lack scientific justification," he said.

In terms of effective dose, Dr. Hendee pointed out that the International Commission on Radiological Protection—the originator of the effective dose concept—states that it is not recommended for epidemiological evaluations, nor should it be used for detailed specific retrospective investigations of individual exposure and risk.

Myriad variables must also be considered when examining lifetime attributable risk (LAR), Dr. Hendee said.

Estimating radiation-induced cancers in the population at doses under 100 mSv may be more measurable in the future

Daily Bulletin coverage of RSNA 2011 is available at RSNA.org/bulletin.



Hendee

with the advent of new pathology criteria, patient registries, better understanding of cellular and molecular processes and studies of sensitive subpopulations, Dr. Hendee said.

"But for now, we must conclude that there are no solid supporting data to show that doses under 100 mSv can cause cancer." □

New Elastography Techniques Improve Thyroid Nodule Assessment

Two recent variations on elastography—one relying upon the carotid artery as the source of compression, another measuring ultrasound shear wave in tissue—improved assessment of suspicious thyroid nodules, according to research presented at RSNA 2011.

WHILE elastography results provide useful guidance for physicians, statistics on thyroid biopsies with fine needle aspiration (FNA) suggest room for improvement, according to Manjiri Dighe, M.D., an associate professor of radiology and director of ultrasound at the University of Washington in Seattle.

“The positive biopsy rate for thyroid cancer varies between 10 percent and 20 percent,” she said. “To diagnose one cancer, we end up doing biopsies in about nine benign nodules.”

Dr. Dighe and colleagues studied thyroid elastography using in-vivo compression—which relies upon carotid artery pulsation as the source of compression—as a way to improve thyroid nodule characterization. “The carotid artery runs very close to the thyroid gland,” Dr. Dighe said. “We decided not to apply any external compression, but instead use the carotid artery as the source of compression. We hoped that our technique would then be operator independent.”

In the study of 19 patients scheduled for thyroid biopsy, Dr. Dighe and colleagues found no significant difference between more-experienced and less-experienced operators who used the in-vivo technique, suggesting it can improve upon



Dighe



Bortolotto

the subjectivity and operator-dependence of existing elastographic methods. The study's chief limitation was the small number of patients, a shortcoming Dr. Dighe hopes to address in the future.

“We need multi-institutional studies big enough to prove that this technique can work,” she said. “Retrospectively, we could have avoided FNA in 60 percent of the thyroid nodules at our institution using this technique.”

Cancer Detection Also Improved by New Molecular Imaging Technique to Boost MR Accuracy

A new MR imaging technique detects protein content at the cellular level and may improve assessment of cancer, according to research presented at RSNA 2011.

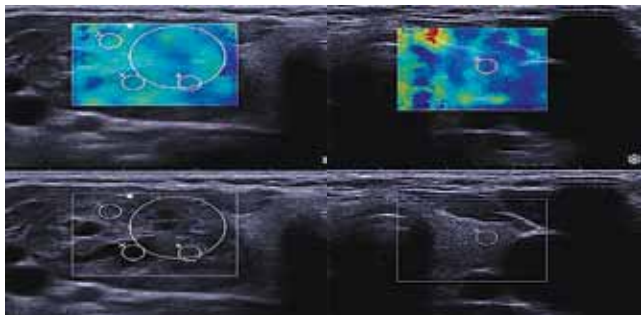
Amide proton transfer (APT) MR imaging takes advantage of the fact that malignant tumor cells have a higher proliferation rate than normal cells, according to Guang Jia, Ph.D., of The Ohio State University Medical Center in Columbus.

“The proliferation process creates lots of proteins, which act as building blocks,” Dr. Jia said. “Proteins in a liquid-like compartment, such as the cytoplasm of a cell, are called mobile proteins. These mobile proteins have a narrow resonance signal and can be observed in MR imaging.”

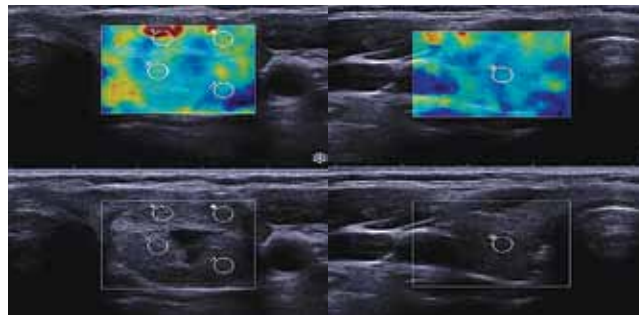
Much of the early research around APT MR imaging centered on the brain. A study on APT-MR imaging and stroke, published in 2003 in *Nature Medicine*, inspired Dr. Jia to

research the technique for other parts of the body. He developed a 3D MR protocol and studied it in 20 patients with different types of cancers, including those of the pelvis, lung, liver, pancreas and eye. The technique does not require injection of a contrast agent and adds only six or seven minutes to the exam.

Researchers calculated the magnetization transfer ratio (MTR) asymmetry, a phenomenon that occurs as a result of amide protons in protein molecules rotating faster than free water protons. “This asymmetry is associated with cellular mobile protein levels and can be used as a biomarker for active tumor,” Dr. Jia said.



Chandra Bortolotto, M.D., and colleagues studied ultrasound shear wave propagation in two groups of patients with thyroid nodules: those with and without autoimmune disease. Above: In the non Autoimmune Thyroid Disease (ATD) patient, the elastosonographic measure of the nodule is on the left; the measurement of extranodular tissue is on the right. Shear wave measurement of the nodule is not influenced by ATD, which could act as a confounding factor for elastosonography.



Above: The same measurement repeated on an ATD patient. Note: On the upper part of the screen the elastosonographic box is superimposed on the B-mode image, while on the lower part there is a B-mode image only. Several regions of interest (ROI) can be placed on every nodule.

Image courtesy of Chandra Bortolotto, M.D.

In another study, Chandra Bortolotto, M.D., from the Policlinico San Matteo in Pavia, Italy, and colleagues studied ultrasound shear wave propagation in two groups of patients with thyroid nodules: those with and without autoimmune disease. In a shear wave, the points of the wave oscillate perpendicular to the direction of the motion of the wave; the speed of the shear wave is directly related to the stiffness of the tissue.

Daily Bulletin coverage of RSNA 2011 is available at RSNA.org/bulletin.

The researchers found that the stiffness of each nodule was higher than that of the embedding tissue in both groups of patients, confirming the ability of shear wave elastography to correctly define thyroid nodule elasticity. As with in-vivo elastography, the shear wave technique is operator independent and reproducible, Dr. Bortolotto said. In addition, it provides quantitative information

and overcomes some of the limitations of in-vivo elastography, such as the need for applying the right amount of pressure with the transducer and the difficulty of imaging multinodular goiters.

“Shear wave elastography seems to represent a useful tool in the evaluation of thyroid nodules,” Dr. Bortolotto said. “The technique may be applied independently from the co-existence of an underlying autoimmune process.” □

“Shear wave elastography seems to represent a useful tool in the evaluation of thyroid nodules.”

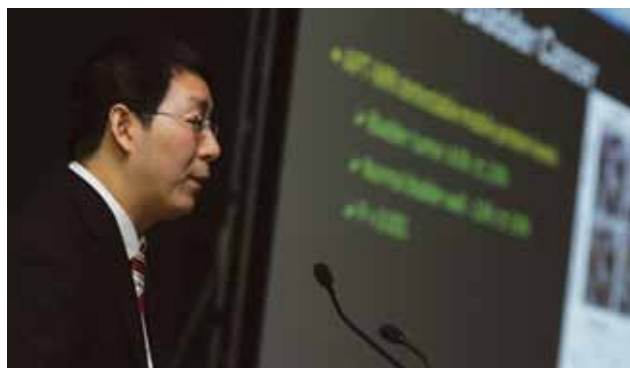
Chandra Bortolotto, M.D.

Reviewers of the APT-MR images noted improved delineation of tumors at the protein level and increases in the MTR asymmetry of the malignant lesions, suggesting an increased cellular content of mobile proteins.

Because APT-MR imaging depicts disease-related changes on an intracellular level, it can reveal a patient’s response to treatment such as chemotherapy much earlier than through anatomical imaging methods, and even faster than diffusion tensor imaging, Dr. Jia said. The findings underscore the potential of proteomics to provide important diagnostic and therapeutic information on tumor activity.

“The intracellular mobile protein levels can be an early predictor of therapy responses, which could not be provided by current imaging approaches,” Dr. Jia said.

Dr. Jia is continuing the current study in an additional 20 patients, and has a grant from the National Institutes of Health to develop the APT-MR imaging technique in a larger group of patients with prostate cancer. He is also collaborating with Johns Hopkins and Philips Healthcare Company of Andover, Mass., to advance APT-MR imaging into new fields like 7.0 T MR, parallel transmission and hybrid PET/MR imaging.



Jia

“We seek to develop a proteomics-based clinical oncology imaging method and APT-MR imaging is an ideal candidate,” he said. “We envision that APT-MR imaging has the potential to advance imaging-based cancer management in clinical diagnosis and therapy assessment.” □

From Smartphones to Samurais, Radiologists Explore the Mobile Future

Experts on mobile computing devices explored the possibilities and challenges for radiology on smartphones, tablets and beyond—everything from issues of diagnostic quality and institutional security concerns to a novel patient-controlled “samurai” application—at RSNA 2011.

“CURRENTLY, medical image slices are useful for doctors, but nearly meaningless for patients,” said Jun Kondo of Toyota National College of Technology, unveiling the SAM-RAY system to much excitement and applause. “We showed images to 20 non-medical students and asked them, ‘Where do the slices show?’ and 80 percent of them could not identify what point on the body the image represented.”

SAM-RAY integrates the iPad and Microsoft Kinect, giving patients a hands-on elucidation of what “slices” represent in medical images. Participants hold their iPads in their hands and slide them up and down in front of their own bodies, while the Kinect picks up the motion of their hands. The corresponding image slices are simultaneously rendered on the iPad, creating the effect of “scanning” the body in real time.

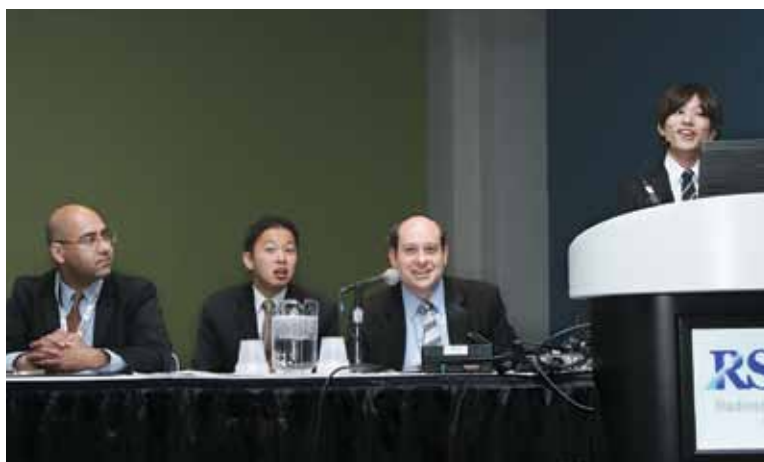
Individual patient setup for the SAM-RAY involves identifying an initial umbilicus position to connect to tracking data. Input heights are taken of the patient from top to bottom. The tool can render as many slices, head to toe, as are available from the patient’s exam. After using SAM-RAY, Kondo said, 85 to 100 percent of participants were able to correctly identify the anatomical position of their images.

“It eases understanding and it’s fun,” Kondo said. He added that the SAM-RAY team hopes to add features like a “drawing” function to further interaction between patients and physicians.

Kit Helps Departments Create Their Own Mobile Websites

Medical departments can easily create their own mobile websites with a web-based application—iWebKit, available at snippetspace.com/iwebkit/demo—presented by Colin McCarthy, M.D., of St. Vincent’s University Hospital in Dublin. The service provides preloaded html code that administrators can customize with their own basic contact information, including a link to Google Maps. Departments can use their own icons for thumbnails for further personalization.

“The result is a mobile site that’s nice and easy, with breadcrumbs to navigate the site,” Dr. McCarthy said. “There’s no patient information contained there, so it poses none of the security concerns.”



As a member of a panel of experts on mobile computing devices, Jun Kondo of Toyota National College of Technology (at podium), presented the SAM-RAY system integrating iPad and Microsoft Kinect at RSNA 2011.

Departments can easily incorporate code from popular analytics sites such as Google Analytics, Dr. McCarthy added, so “you can see where your hits are coming from.”

“One of the neatest things is the ability to add your own little icon to the home screen,” Dr. McCarthy said. “You can even create QR codes to put up around your department, so while patients are waiting, they can scan them and go straight to the website.”

“You can even create QR codes to put up around your department, so while patients are waiting, they can scan them and go straight to the website.”

Colin McCarthy, M.D.



Images courtesy of Colin McCarthy, M.D.

Medical departments can create their own mobile websites with a Web-based application—iWebKit—which provides preloaded html code that administrators can customize with their own contact information, including a link to Google Maps. Above: Screen shots demonstrate the customized website at St. Vincent’s University Hospital in Dublin.

Busy physicians can also more easily read medical journals on the go with a number of new apps on the market. In a session he called “Saving Trees,” RSNA 2011 presenter Vishal Ruparelia, M.D., of Henry Ford Hospital in Detroit, highlighted a few: iAnnotate, for casual readers; Papers, for researchers; Readdle Docs, for users with multiple devices; and iBooks, for heavy article readers.

Daily Bulletin coverage of RSNA 2011 is available at RSNA.org/bulletin.

Options Abound, Discretion Advised

While many RSNA 2011 presentations examined general issues of mobile device platforms, security compliance, bandwidth, integration and display quality, other studies looked at the use of mobile devices specifically in acute stroke, pneumothorax, pulmonary nodules and tuberculosis, as well as in interpreting head CT and in on-call and emergency CT situations.

David S. Hirschorn, M.D., director of radiology informatics at Staten Island University Hospital in New York and moderator of the RSNA 2011 session, advised discretion when using mobile devices

in an interpretive setting. “Though the iPhone can display as many pixels as a workstation monitor, it’s not an issue of number of pixels—it’s an issue of screen size,” said Dr. Hirschorn. “The reality is that in some situations the device screen is just too small to make a confident determination.”

Users and developers must also remain attuned to the preferences of referring physicians and patients when creating new applications, Dr. Hirschorn said. “The referring physicians are the hands that feed you, and you can’t control what devices they’re using,” he said. “We need to play to the devices that the doctors and patients choose.” □

WEB EXTRAS

Evaluate for yourself the products and apps mentioned in this article:

- ✓ iWebKit: snippetspace.com/iwebkit/demo
- ✓ iAnnotate: www.ajidev.com/iannotate
- ✓ Papers: www.mekentosj.com/papers
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Also available on mobile devices is select content from *RSNA.org* in a mobile-optimized format. Access m.rsna.org from your smartphone or other mobile device—or scan the QR code at right—to find:

- *RadiologyInfo.org*: Check out the latest patient education materials, including images and video.
- *Annual Meeting*: Check in throughout the year for updates on new content to be featured at RSNA 2012, as well as infor-

mation about esteemed lecturers and honorees and other announcements.

- *Radiology* and *RadioGraphics*: Browse Tables of Contents for RSNA’s peer-reviewed science and education journals and read articles.

iPhone, iPod touch and iPad users can also download full-content *Radiology* and *RadioGraphics* apps for their mobile devices. Go to RSNA.org/apps.



Visiting Professors Inspired by Resourcefulness of Myanmar Radiologists

Once a wealthy nation known as Burma, Myanmar is now in dire need of medical supplies, modern diagnostic imaging equipment, and funding for routine maintenance and upkeep of existing equipment, according to three radiology professors who recently visited the struggling nation.

MYANMAR is Southeast Asia's second-largest country geographically and is slightly smaller than Texas. It is bordered by China, Laos, Thailand, Bangladesh and India. "Myanmar poses a challenging environment for the medical community," said Jeffrey Peterson, M.D., residency program director at the Mayo Clinic in Jacksonville, Fla.

Dr. Peterson, Thomas Kinney, M.D., and Howard Rowley, M.D., traveled to Myanmar in November through RSNA's International Visiting Professor (IVP) program. Hosted by the Myanmar Radiological Society, the physicians devoted their two-week trip to educating Myanmar's radiologists and assessing the state of healthcare in a country facing challenges much different than those in the U.S. The group's visit was requested by the president of the Myanmar Radiological Society, Professor Lin Tun Tun, and each doctor was asked to teach and give lectures involving their specialties.

The experience was "very enriching," said Dr. Peterson, who specializes in musculoskeletal radiology. "It enlightened me as to the challenges of providing healthcare to countries with underlying economic difficulties," he said. "It was incredible to see how resourceful the local physicians are in taking care of their patients despite inadequate equipment and supplies."

Dr. Kinney, who specializes in interventional radiology, presented the interventional radiology course, "Back to the Basics" a series of four lectures and a hands-on workshop, during the trip.

Dr. Rowley, chief of neuroradiology at the University of Wisconsin at Madison, said the experience gave him an appreciation for "how people can survive against all odds."

Economic Disparities, Lack of Resources, Staggering

Each day, the three doctors headed to the Yangon General Hospital to lecture and share case advice with residents and staff radiologists. They also lectured at the 9th annual Myanmar Radiological Society Meeting attended by nearly 250 radiologists and the Myanmar Minister of Health.

The trio also visited other local hospitals—including New Yangon General Hospital—where they interacted with radiologists and trainees and gave lectures. "Personally we were able to broaden our understanding of the level of healthcare available in Myanmar and the challenges the country faces," Dr. Peterson said. "A very important aspect of the trip was to establish relationships with the radiologists in Myanmar and to provide them with an additional resource for assistance in the future."

One of the first workplaces the doctors encountered was the cashier's office in the hospital's radiology department, said Dr. Kinney, a professor of clinical radiology at the University of California, San Diego. Fees were incredibly low—a chest radiograph, for example, was just \$1.

Physician salaries in Myanmar also reflect that economic scale. For instance, the head of radiology at Yangon General Hospital earns only \$260 a month, while a private practice physician makes about \$1,500 annually. "Physicians are not well-compensated," Dr. Kinney said. "You just wonder what happened—this use to be one of the wealthiest countries in Southeast Asia."

What remains is a country struggling to take care of its citizens. The 500-bed New Yangon General Hospital



International Visiting Professors (from left), Howard Rowley, M.D., Jeffrey Peterson, M.D., and Thomas Kinney, M.D., enjoyed the scenic beauty on a trip down the Irrawady River in Bagan, Myanmar.

ON THE COVER

The IVP team spent the majority of their time at Yangon General Hospital. Pictured (from left:) Howard Rowley, M.D., Professor Lin Tun Tun, president of the Myanmar Radiological Society, Jeffrey Peterson, M.D., and Thomas Kinney, M.D.



“It was incredible to see how resourceful the local physicians are in taking care of their patients despite struggles with equipment and supplies.”

Jeffrey Peterson, M.D.



The stunning Shwedagon Pagoda in Yangon, Myanmar, was one of the highlights of the trip for IVP team members Howard Rowley, M.D., (left) and Jeffrey Peterson, M.D.

lacks angiography equipment and CT scanners, and there is broken technology with no resources for repairs, Dr. Kinney said. Catheters are reused and there are no needles.

The hospital's library is stocked with old radiology journals rather than medical textbooks, and there are no laundry or cafeteria services—patients' families wash their clothes and cook their meals. There is no air conditioning in the hospital even though the humidity is 95 percent, Dr. Kinney said. "They really need a lot of help," he said. "They need help with everything."

Opportunities Exist for Change, Growth

Myanmar does possess considerable growth opportunities in healthcare and is home to many talented, high-quality physicians, Dr. Kinney said. One area with growth potential, he said, is interventional radiology, which is now practiced only minimally. The country's radiology residency program only lasts two years and subspecialty fellow training is not offered, though Myanmar physicians may soon be sent to other countries, such as the Republic of Singapore, for additional training.

While only about 2.5 percent of the country's gross domestic product (GDP) is spent on healthcare, the hope is that the government will increase that amount to 5 percent, Dr. Kinney added. "It's a dramatically different level of care than what we're used to," he said. "But with money and effort, it could change."

Local Color is Backdrop for Adversity

While the group devoted a lot of time to work, they were also able to take in some of the spectacular local color that the country possesses in abundance. Along with Yangon City, the doctors also traveled to Bagan, an ancient city in the Mandalay Region of Burma, visiting cultural sites including thousands-of-years-old Buddhist temples and pagodas.

Another highlight was a visit to Inle Lake, the second-largest lake in Myanmar, where there are no cars, only fishermen and farmers, Dr. Rowley said. "It was just beautiful," he added. A signature char-



Each day during their trip, IVP team members visited Myanmar's Yangon General Hospital to lecture and share case advice with residents and staff radiologists. Above: Jeffrey Peterson, M.D., consults with the hospital's radiology team.

acteristic of the area is the fishermen who row with their feet, standing up in the boat and throwing their fishing net out with one foot and rowing with the other while using their arms for other tasks.

"Myanmar is country ruled by military dictatorship, with very little in terms of medical resources," Dr. Rowley said. "But people are working hard and committed as much as any of us—they still put their heart and soul into it. It gives us an appreciation of what we have in the U.S. that we sometimes take for granted."

"Their work ethic and professionalism were extremely positive—despite adverse situations," Dr. Kinney said.

The RSNA IVP program annually sends teams of North American professors to lecture at national radiology society meetings and visit radiology residency training programs at selected host institutions in developing nations. In addition to Myanmar,—in 2011 IVP teams traveled to Malaysia, Mexico and Lithuania. In 2012, IVP teams will travel to El Salvador, Nepal, Vietnam and Mexico. Other recent destinations have included Estonia, Bolivia, Brazil and the Philippines. □

WEB EXTRAS

For more information on the Myanmar Radiology Society, go to www.mmcentral.org.

For more information on RSNA's Visiting Professorship Program, go to RSNA.org/International/CIRE/ivpp.cfm.

The IVP program is made possible by the support of Agfa HealthCare and Fujifilm Medical Systems.

New Academy Poised to Create Radiology's Most Effective Leaders

It is now more apparent than ever that leadership skills are vital for radiologists in both the academic and private hospital settings to tackle the mounting financial obstacles facing health-care. Although radiology continues to attract promising candidates to be tomorrow's leaders, the proper foundation for success is rarely provided in medical school or residency.

TO MEET that need, four radiology education associations—RSNA, the American Roentgen Ray Society (ARRS), Association of University Radiologists (AUR) and Society of Chairs in Academic Radiology Departments (SCARD)—have launched a new effort that combines existing leadership and management courses under one umbrella.

Launched in 2011, the Academy of Radiology Leadership and Management (ARLM) helps radiologists focus their professional development by prescribing 50 hours of education—at least 30 hours in person—across these learning domains: financial, legal/contracting, human resources, academic, professionalism and more. ARLM awards a Certificate of Achievement upon completion.

Courses that count toward ARLM credit are offered online and during the annual meetings of sponsoring societies. (See sidebar on ARLM facts.)

The Academy fills a niche from which all radiologists can benefit, said ARRS President James Brink, M.D., a professor and chair of the Department of Diagnostic Radiology at Yale University School of Medicine in New Haven, Conn.

“While each organization has its own vertical portfolio, this is the first time—to my knowledge—that one coalition has horizontally integrated programming in a collective, organized way for radiologists seeking advanced training in radiology leadership and management,” Dr. Brink said.

Radiologists will find the ARLM program accessible, affordable and highly effective, said N. Reed Dunnick, M.D., Chairman of the RSNA Board of Directors and an RSNA representative to the ARLM Steering Committee formed to oversee development of the program.

“It will be easy for radiologists to partake of parts of the educational content,” said Dr. Dunnick, the Fred Jenner Hodges Professor and chair of the Department of Radiology at the University of Michigan in Ann Arbor, Mich. “Those who are serious about the responsibilities of leadership positions in radiology will want to complete an ARLM curriculum. The certificate is merely tangible evidence that a body of knowledge has been accessed.”

Experts Shape ARLM Curriculum

ARLM grew from parallel discussions several years ago among the leaders and members of SCARD and RSNA about the need to formally organize



Dunnick



Brink



Jackson



Beauchamp

leadership coursework already available, said Valerie Jackson, M.D., a SCARD representative on the ARLM Steering Committee and the John A. Campbell Professor of Radiology and chair of the Department of Radiology at Indiana University in Indianapolis.

“The increasing complexity of medicine creates a much greater need for imaging professionals to understand the business side of radiology,” Dr. Jackson said. “There was a real need for more formal organization of the many leadership and management offerings already out there.”

“Those who are serious about the responsibilities of leadership positions in radiology will want to complete an ARLM curriculum.”

N. Reed Dunnick, M.D.



Radiologists seeking advanced training in radiology leadership and management can earn a Certificate of Achievement from the newly formed Academy of Radiology Leadership and Management (ARLM) which helps radiologists focus their professional development by prescribing 50 hours of education across a spectrum of core domains.

Using existing resources, SCARD and RSNA came together to develop the initiative, which also grew to include AUR and ARRS.

The ARLM Steering Committee, made up of representatives from those societies, developed a program from courses offered at their respective annual meetings. For example, more than three dozen courses offered at RSNA 2011 count toward the ARLM Certificate of Achievement.

Steering committee members relied on each other's expertise to develop content. For example, ARRS representative Jonathan B. Kruskal, M.D., Ph.D., offered quality improvement expertise while RSNA representative Ronald L. Arenson, M.D., provided financial and business acumen.

"We put together a very broad and deep curriculum without substantial incremental costs," said Norman J. Beauchamp, M.D., a SCARD representative of the ARLM Steering Committee and a professor and chair in the Department of Radiology at the University of Washington, Seattle. "It seems fitting that we applied business and leadership principles to overcome challenges of intersocietal coordination and communication, utilizing marginal capacity in order to provide the greatest value to those we are serving—the learner."

Training Reflects Changes in Radiology

Because medical imaging accounts for a large part of the healthcare dollar, radiology leaders are under increasing pressure to understand all facets of the issues driving revenue—a big factor in formulating the ARLM program, Dr. Beauchamp said.

"Over the last decade, being a radiology department chair has become a fundamentally different job," Dr. Beauchamp said. "Deans and CEOs are looking to radiology to be highly effective in enabling the mission of the institution, and that means understanding the business end of the industry."

ARLM courses run the gamut from covering financial issues such as accounts receivable, billing and supply chain management to focusing on "softer" skills such as mentoring, having difficult conversations with staff members and motivating employees.

Another skill set is becoming more critical every day:

"People at the helm have to understand how to usher in the major changes under way in healthcare while maintaining the morale of the group," Dr. Beauchamp said. "They need to be stewards of hope."

While some would argue that those qualities can't be learned, ARLM leaders say the program builds the kind of leaders who are able to rise to any occasion.

"A lot of people say leaders are born not made," Dr. Jackson said. "There probably are some innate personality traits that make a person more effective, but there are so many aspects of good leadership that can be learned. This program teaches the wide array of skills that go into making someone a better leader." □

ACADEMY OF RADIOLOGY LEADERSHIP AND MANAGEMENT (ARLM) AT A GLANCE:

- Courses taken over a three-year period can be applied to certificate requirements.
- CME coursework from previous years may count toward certification.
- Applications for certificates are now being accepted.
- Coursework toward the certificate will be available at the 2012 meetings of RSNA, SCARD, ARRS and AUR.
- The only fees associated with the certificate program are those related to taking the CME courses.
- To apply for the certificate, submit a listing of the relevant courses to the ARLM Steering Committee at radleaders@rsna.org.
- Participants must take a minimum of three hours in each domain. However, radiologists in private practice are exempt from the hours requirement in the academic mission domain.
- Successful earners of the certificate will be recognized through ribbons and signage at the annual meetings of the participating organizations and have their name featured in an honor roll accessible on the ARLM website. Certificate holders can also arrange to have a letter confirming their accomplishment sent to individuals they specify at the time of certificate award.



Go to www.radleaders.org to learn how to obtain the Certificate of Achievement and see a list of qualifying courses.

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Sodium/Proton MR image of knee cartilage in osteoarthritis

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Continued on page 23

Journal Highlights

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

Critical Review and State of the Art in Interventional Oncology: Benign and Metastatic Disease Involving Bone

Image-guided percutaneous ablation methods have proven effective treating benign bone tumors and for palliation of metastases involving bone and soft-tissue sites beyond the liver and lung. Image-guided radiofrequency ablation is now the standard treatment for osteoid osteoma as the procedure can be performed with higher rates of technical success, decreased morbidity and lower cost than those obtained with open surgery.

Several ablation methods have been used to effectively treat focal metastatic skeletal disease, primarily with the goal of palliation of patient pain, according to a

State-of-the-Art Review in the March issue of *Radiology* (RSNA.org/Radiology) in which Daniel Rosenthal, M.D., Massachusetts General Hospital, Boston, and Matthew R. Callstrom, M.D., Ph.D., of the Mayo Clinic, Rochester, Minn., review image-guided ablation of benign bone tumors and malignant primary tumors.

Cryoablation may have an advantage over radiofrequency ablation for treatment of painful metastatic disease, as the ablation zone is readily visualized intraprocedurally with intermittent noncontrast-enhanced CT or MR imaging, according to the authors.

"Substantial pain reduction is possible in patients who



A, Radiograph shows an elongated zone of cortical reactivity along the medial tibia. The lucent tumor is only partly visible at the proximal end of the sclerosis (*arrow*). **B**, Sagittal reformation of CT scan shows a very elongated lesion within the tibia cortex (*arrow*). **C**, In cross section, the tumor has typical oval contour and exhibits very faint internal ossification (*arrow*).

(*Radiology* 2012;262:3:765-780) ©RSNA, 2012. All rights reserved. Printed with permission.

have failed to achieve benefit from conventional therapies, including chemotherapy and external-beam radiation," the authors write. "Importantly,

the pain reduction that is achieved is durable over many months of observation."

This article meets the criteria for AMA PRA Category 1 Credit™. CME is available in print and online.

MR Imaging Evaluation of Abdominal Pain during Pregnancy: Appendicitis and Other Nonobstetric Causes

Although MR imaging is often performed specifically for diagnosis of possible appendicitis—the most common illness necessitating emergency surgery in pregnant patients—it is important to look for pathologic processes outside the appendix that may be an alternative source of abdominal pain.

In an article in the March-April issue of *RadioGraphics* (RSNA.org/RadioGraphics), Lucy B. Spalluto, M.D., of Warren Alpert Medical School of Brown University, Women and Infants Hospital, Rhode Island Hospital, Providence, R.I., and colleagues present the MR imaging technique used to evaluate abdominal pain in pregnant patients.

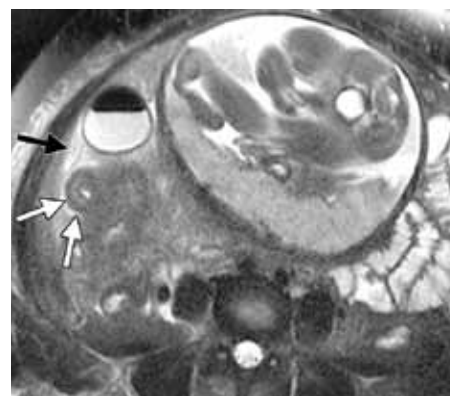
In addition, the authors:

- Illustrate the normal anatomy of the pregnant female pelvis at multiplanar MR imaging
- Review the findings of acute appendicitis in the pregnant patient
- Discuss the appearances of numerous entities other than appendicitis that can be a source of abdominal pain

Accurate and efficient diagnosis of the source of abdominal pain is important, as a delay in diagnosis can be detrimental to the condition of both the mother and fetus, the authors note.

"In addition, the excellent soft-tissue contrast resolution of MR imaging has the added benefit of allowing evaluation of numerous additional structures within the field of view that may be the source of the patient's abdominal pain," the authors write.

RadioGraphics



Active Crohn disease in a 33-year-old pregnant patient at 24 weeks gestation. Axial true FISP images from MR enterography show mural thickening in the terminal ileum (*white arrows*) with surrounding edema and free fluid (*black arrow*).

(*RadioGraphics* 2012;32; in press) ©RSNA, 2012. All rights reserved. Printed with permission.

This article meets the criteria for AMA PRA Category 1 Credit™. CME is available in print and online.

Radiology in Public Focus

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

Use of MR Imaging to Determine Preservation of the Neurovascular Bundles at Robotic-assisted Laparoscopic Prostatectomy

Prostate MR imaging may be useful for helping surgeons plan the extent and side of nerve sparing during robotic-assisted laparoscopic prostatectomy (RALP), according to new research.

In the study, Timothy D. McClure, M.D., of the David Geffen School of Medicine at the University of California Los Angeles, and colleagues investigated endorectal coil MR imaging as a way to improve preoperative assessment of prostate cancer and the involvement of the neurovascular bundles.

Researchers prospectively evaluated 104 prostate cancer patients who underwent preoperative endorectal coil MR imaging of the prostate and subsequent RALP. They determined the differences in the surgical plan before and after review of the MR imaging report and compared them with the actual surgical and pathologic results.

Results showed that preoperative prostate MR imaging data changed the decision to use a nerve-sparing technique during RALP in 28 (27 percent) of the 104 patients. The surgical plan was changed to the nerve-sparing technique in 17 (61 percent) of the 28 patients and to a non-nerve-sparing technique in 11 patients (39 percent). The decision to opt for nerve-sparing surgery did not compromise oncologic outcome.

"Some patients thought to require non-nerve-sparing surgery might safely undergo nerve-sparing surgery on the basis of MR imaging findings because this change in surgical plan does not appear to be associated with an increase in positive surgical margins," according to researchers.



Example of surgical plan changed to nerve-sparing technique. Image in 59-year-old man with PSA level of 4.3 ng/dL and high volume at biopsy (Gleason grade 3 + 3 = 6). Non-nerve-sparing surgery was initially planned on the left on the basis of biopsy findings. MR imaging showed no involvement of the neurovascular bundles or seminal vesicles, and surgical plan was changed to bilateral nerve-sparing surgery. Multivoxel spectroscopic overlay shows elevated choline levels (arrows) corresponding to anterior midgland. Final pathologic examination demonstrated Gleason score of 3 + 4 = 7 and confirmed imaging findings of organ-confined cancer, with no suggestion of extracapsular extension to the neurovascular bundle.

(Radiology 2012;262:3:874-883) ©RSNA, 2012. All rights reserved. Printed with permission.

Media Coverage of RSNA

In December 2011, media outlets carried 4,898 RSNA-related news stories. These stories reached an estimated two billion people.

December print coverage included *The New York Times*, *The Washington Post*, *The Philadelphia Inquirer*, *The Toronto Star*, *The Globe and Mail* (Toronto), *The Indianapolis Star*, *Chicago Sun-Times*, *The Sun* (Baltimore, Md.), *Milwaukee Journal Sentinel*, *Pittsburgh Post-Gazette*, *The Miami Herald*, *The Charlotte Observer*, *Virginian-Pilot*, *Tribune-Review* (Greensburg, Pa.) and *Calgary Herald*.

Broadcast coverage included CNN, CNN Headline News, BBC World, NPR, Bloomberg Radio, WABC-TV (New York), KABC-TV (Los Angeles), WNYW-TV (New York), WLS-TV (Chicago), WGN-TV (Chicago), WPVI-TV (Philadelphia), WMAQ-TV (Chicago), WBBM-TV (Chicago), WSVN-TV (Miami), WFLD-TV (Chicago), KCPQ-TV (Seattle), and WFTV-TV (Orlando).

Online coverage included Yahoo! News, *The New York Times*, Yahoo! Sports, *New York Daily News*, *MSNBC.com*, *New York Post*, *Los Angeles Times*, *Boston Globe*, *Newsday.com*, *Miami Herald*, *Reuters.com*, *San Francisco Chronicle*, *Washington Post*, *BusinessWeek.com* and *Huffingtonpost.com*.



MARCH PUBLIC INFORMATION ACTIVITIES FOCUS ON COLORECTAL CANCER

To highlight National Colorectal Cancer Awareness Month in March, RSNA distributed radio public service announcements (PSAs) encouraging listeners to be screened for colorectal cancer.

In addition, RSNA distributed the "60-Second Checkup" audio program to nearly 100 radio stations across the U.S. The segments focused on colorectal cancer topics, including how increased screening could lead to a decrease in death rates from the disease.

Education and Funding Opportunities



The 2011 RSNA Introduction to Research for International Young Academics class: (*back row, from left*) Ajit Goenka, M.D., Darragh Halpenny, M.D., Achille Mileto, M.D., Rajat Chowdhury, B.M. BCh., M.A., MSc. BSc., Raul Gamez Sala, M.D., Patrick Omoumi, M.D., M.S.C., Jorge Eugenio Martinez Garcia, M.D., Temitope Soyemi, M.D., Nasreen Mahomed, MBB.Ch.; (*bottom row, from left*) Sung Soo Ahn, M.D., Chiara Carducci, M.D., Leticia Borrino, M.D., Idoia Corcuera Solano, M.D., Elcin Zan, M.D., Mami Lima, M.D., Vicci du Plessis, MB.Ch.B.

RSNA Introduction to Research for International Young Academics

Deadline for nominations—**April 15**

The RSNA Committee on International Relations and Education (CIRE) seeks nominations for this program that encourages young radiologists from countries outside North America to pursue careers in academic radiology by:

- Introducing residents and fellows to research early in their training
- Demonstrating the importance of research to the practice and future of radiology
- Sharing the excitement and satisfaction of research careers in radiology
- Introducing residents to successful radiology researchers, future colleagues and potential mentors

The program consists of a special four-day seminar held during the RSNA Scientific Assembly and Annual Meeting. CIRE recommends international young academics for consideration by the

RSNA Board of Directors each year. Complimentary registration, shared hotel accommodation for the duration of the program and a stipend to help defray travel expenses are awarded to successful candidates.

Eligible candidates are residents and fellows currently in radiology training programs or radiologists not more than two years out of training who are beginning or considering an academic career. Nominations must be made by the candidate's department chairperson or training director. Fluency in English is required.

Nomination forms are available at RSNA.org/IRIYA.

Medical Meetings March-April 2012

MARCH 11-14

Society of Thoracic Radiology, Annual Meeting, Hyatt Regency Huntington Beach Resort and Spa, Huntington Beach, Calif.
• www.thoracicrad.org

MARCH 19-22

Association of University Radiologists (AUR), 60th Annual Meeting, in sponsorship with RSNA, JW Marriott San Antonio Hill Country, Texas
• www.aur.org

MARCH 24-29

Society of Interventional Radiology (SIR), 37th Annual Scientific Meeting, Moscone Center, San Francisco, Calif.

• www.sirweb.org

MARCH 25-30

IDKD's 44th International Diagnostic Course, Davos, Switzerland. Main Course Topics: Diseases of the brain, head and neck, spine, including satellite courses
• www.idkd.org

MARCH 25-30

Society of Gastrointestinal Radiologists (SGR) and Society of Uroradiology (SUR), Abdominal

Radiology Course, Fairmont Scottsdale Princess

• www.sgr.org

MARCH 29-APRIL 1

American Institute of Ultrasound in Medicine (AIUM), Annual Meeting, JW Marriott Desert Ridge Resort and Spa, Phoenix
• www.aium.org

APRIL 12-15

Japan Radiological Society (JRS), 71st Annual Meeting, InterContinental Yokohama Grand, Japan
• www.congre.co.jp/jrs71/english/index2.html

APRIL 19-21

SNM, with cosponsors including RSNA, 3rd Multimodality Cardiovascular Molecular Imaging Symposium, National Institutes of Health, Bethesda, Md.
• www.snm.org

APRIL 26-29

Canadian Association of Radiologists (CAR), 75th Annual Scientific Meeting, Le Centre Sheraton, Montreal, Quebec
• www.car.ca/en.aspx



2012 IHE® Connectathon Builds on Information Technology Focus

The annual Integrating the Healthcare Enterprise® (IHE) North America Connectathon Conference continues to gain momentum as the importance of systems interoperability in health information technology (HIT) grows by leaps and bounds.

Held Jan. 11 in Chicago, the 14th annual conference offered users and developers of HIT systems the opportunity to learn about achieving interoperability and making more effective use of electronic health records (EHRs). The conference highlighted organizations and leaders driving the adoption of standards-based health IT solutions.

Featured topics included:

- Delivering high-value health care through regional health information exchange
- Leveraging IHE XDS to achieve health information exchange—real world implementations
- Current advancements in medical device integration
- Exploring open source tools to achieve interoperability
- The next revolution in standards-based image sharing
- Connecting EHRs to HIEs: A collaboration of states and vendors driving toward common specifications

The IHE North American Connectathon Conference attracted 100 attendees from a wide range of healthcare settings. The conference is an important addition to the annual IHE North American Connectathon, health IT's largest interoperability testing event, held Jan. 9-13 in Chicago.



Education and Funding Opportunities

Growing Number of CME, SAMs Certificates Awarded at RSNA 2011, Online

RSNA annual meetings offer the perfect opportunity to earn CME and self-assessment module (SAM) credit. RSNA 2011 was designated for a maximum of 92.75 *AMA PRA Category 1 Credits™*. At RSNA 2011, a total of 106,633.75 hours of *AMA PRA Category 1 Credit™* were awarded to attendees.

An integral part of any physician's Maintenance of Certification (MOC) needs, the American Board of Radiology (ABR) recommends that physicians obtain two SAMs credits per year. At RSNA annual meetings, courses designated for

SAM credit include paper tests or an electronic audience response system. At RSNA 2011, 1,289 certificates were issued for in-person SAM participants.

Members can also access RSNA's growing collection of CME and SAMs offerings by visiting RSNA.org/education. Courses are free to RSNA members.

Over the past year, the RSNA has seen tremendous growth in the number of CME certificates issued via online education courses. In 2011, RSNA issued 99,714 online CME certificates.

Another great way to earn CME credit online is via *RadioGraphics* CME tests which are accessible by visiting www.rsna.org/education/search/RG.

RadioGraphics CME learning opportunities have been the most accessed tests, with 792,671 certificates issued since CME was incorporated into the journal.

Online SAMs courses also continue to grow steadily. RSNA offers more than 70 SAMs courses online and in 2011 issued 10,297 certificates for online SAMs.

For Your Benefit

RSNA Member Benefits Inspire Resident's Gratitude

Along with a full roster of exclusive benefits, many RSNA members also experience life- and career-changing rewards that are more difficult to quantify.

While she says she can't place a price on the impact RSNA has had on her life, Oshaani Abeyakoon, M.B.B.S., B.S.C., a fourth-year-resident at Sheffield Teaching Hospitals in the United Kingdom, said the experience inspired her to "pay it forward" by making a donation to the Research & Education (R&E) Foundation at RSNA 2011. Her first-ever donation was intended not only to support educational grants but as a show of gratitude for her experience with RSNA.

"I have made so many incredible friends and have been inspired to think and innovate," said Dr. Abeyakoon, who has attended two RSNA annual meetings. "Thanks to RSNA, I am a better radiologist and have learned about life, leadership and technology."

Dr. Abeyakoon is especially thankful for the many benefits RSNA offers

members-in-training—including free membership and reduced rates during the first and second year of practice. She said her donation was also made "out of gratitude for the remarkable opportunities you give us residents."

In the future, she hopes to "have the opportunity to donate more to support RSNA in the remarkable work the Society does," she added.

For a full description of all RSNA member benefits and to view the newly redesigned Membership homepage, go to RSNA.org.



Abeyakoon

The Value of Membership

“Thanks to RSNA, I am a better radiologist and have learned about life, leadership and technology.”

Oshanni Abeyakoon, M.B.B.S., B.S.C.



Other Radiology Headlines

SRU to Convene Consensus Conference on Early First Trimester Sonography

In October 2012, the Society of Radiologists in Ultrasound will convene a consensus conference on early first trimester sonography, focusing on establishing sonographic criteria for excluding the possibility of a viable pregnancy. The conference will precede the SRU annual meeting in Baltimore and will be moderated by SRU immediate past-president Peter M. Doubilet, M.D., Ph.D.

The panel for the conference will include physicians with expertise in early pregnancy from several specialty areas, including radiology, obstetrics and gynecology and emergency medicine.



AIUM Announces Collaborations

The American Institute of Ultrasound in Medicine (AIUM) has recognized the American College of Emergency Physicians (ACEP) Policy Statement Emergency Ultrasound Guidelines as meeting the qualifications for performing ultrasound in the emergency setting. The guidelines describe the education and training required by emergency physicians to achieve competency for the performance of focused emergency ultrasound applications in clinical practice.

AIUM has developed with the American Urological Association (AUA) the Practice Guideline for the Performance of an Ultrasound Examination in the Practice of Urology. The guideline assists practitioners performing an ultrasound examination in the practice of urology, provides direction in the areas of kidney, bladder, prostate, scrotal and penile ultrasound and addresses key issues relating to documentation, quality control and improvement, safety, infection control and patient education.



Annual Meeting Watch

Submit Abstracts by March 31

The online system to submit abstracts for RSNA 2012 is now active. The submission deadline is 12 p.m. Central Time on March 31, 2012. Abstracts are required for scientific presentations, education exhibits, applied science, quality storyboards and quantitative imaging reading room showcase applications.



To submit an abstract online, go to RSNA.org/abstracts.

The easy-to-use online system helps the Scientific Program Committee and Education Exhibits Committee evaluate submissions more efficiently. For more information about the abstract submission process, contact the RSNA Program Services Department at 1-877-776-2227 within the U.S. or 1-630-590-7774 outside the U.S.

RSNA 2011 Virtual Meeting a Very Real Success

RSNA's first-ever Virtual Meeting produced strong attendance numbers reflecting considerable interest in the event that successfully complemented the RSNA 2011 physical meeting.

The virtual meeting—which allowed attendees from around the globe to experience the annual meeting, earn CME and visit with vendors from their home or office in a 2D/3D virtual environment—drew 3,452 participants (2,036 domestic; 1,426 international) for its launch.

Attendees also showed strong interest in creating custom avatars to explore a 3D world or participate in 2D via a Web portal. At RSNA 2011, 1,057 registrants created 3D avatars while 542 of those people actually entered and participated within the 3D virtual environment.

In addition, 1,682 physicians attended



four Essential Courses held as part of the Live Day Educational Sessions and 2,836 physicians attended nine various educational sessions with 539 obtaining a total of 2,029 CME credits.

All in all, the virtual meeting was a very real success, according to results of

a survey taken afterward. A full 85 percent of participants said they were satisfied with their virtual meeting experience, while 78 percent plan to participate again in 2012.

RSNA 2012 Registration

Registration Fees

BY NOV. 2	ONSITE	
\$ 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

Deadlines

March 31	Deadline for abstract submission
May 9	RSNA/AAPM member registration and housing open
June 6	General registration and housing open
July 11	Course enrollment opens
October 19	Deadline for international mailing
November 2	Deadline for housing and discounted registration
Nov. 25 - 30	RSNA 98th Scientific Assembly & Annual Meeting

For more information about registering for RSNA 2012, visit RSNA2012.RSNA.org, e-mail reginfo@rsna.org or call 1-800-381-6660 x7862.

Residents & Fellows Corner

New Policy Limits Eligibility Period for ABR Initial Certification

Radiology residents will now have six years after finishing residency to complete the initial American Board of Radiology certification process, according to a new ABR policy. Because ABR's qualifying and certifying examinations will each be offered twice yearly, candidates will have 12 opportunities during the six-year period to pass the exams.

ABR created the policy in response to an American Board of Medical Specialties (ABMS) mandate that all member boards have consistent policies for the length of board eligibility. ABR noted that because a number of current candidates have completed training and continue in the examination process, the new policy will have a transitional phase-in period:



End of Training	Termination of Board Eligibility
2004 or before	December 31, 2014
2005-2006	10 years (i.e., 2015 or 2016)
2007-2010	January 1, 2017
2011 and after	6 years from end of training

After the period of eligibility, candidates failing to successfully complete the initial certification process will no longer be considered by the ABR as board eligible, will no longer be permitted to designate themselves as such for communications or credentialing purposes and will no longer be reported as board eligible on the ABMS website or in verification letters. To return to board eligible status, a candidate will have to meet several requirements, including an additional year of training.

More information is available at www.theabr.org.

NRMP Launches Supplemental Offer Program This Year

The National Resident Matching Program (NRMP) has implemented its Supplemental Offer and Acceptance Program (SOAP), a formal process by which students who aren't selected for a residency in the main match can apply for unfilled positions.

SOAP is designed to eliminate the chaos seen in past years as unmatched students personally contacted institutions with unfilled positions. NRMP data indicate that in 2011, there were eight unmatched applicants for every unfilled position.

Match Day is moving from the third Thursday to the third Friday of March to accommodate the SOAP implementation. Highlights of this year's schedule are:

March 12

- Applicant matched and unmatched information posted to the NRMP website at 12:00 noon Eastern time.
- Locations of all unfilled positions released at 12:00 noon Eastern time only to participants eligible for SOAP.

March 14

- Program offers begin at 12:00 noon Eastern time.

March 16

- **Match Day Ceremonies**—Match results for applicants posted to NRMP website at 1:00 p.m. Eastern time.
- SOAP concludes at 5:00 p.m. Eastern time.

More information about SOAP is available at www.nrmp.org.

R&E Foundation Individual Donors

Continued from Page 16

Steven J. Wegert, M.D.
Edward H. Welles III, M.D.
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Robert K. Zeman, M.D.
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Harry L. Zinn, M.D.

Consolidation Key to Revamped Membership Page

Part of the all-new *RSNA.org*, the newly redesigned membership page features content, navigational and structural changes to better enhance your membership experience. Best of all, your membership needs are now consolidated on one page.

With one click you can access everything from your RSNA profile to a lengthy list of benefits offered exclusively with RSNA membership.

Highlights of the revamped page include:

- ▶ **My Account/Membership Information:** Log on here to keep up-to-date on all relevant RSNA information.
- ▶ **Feedback:** Click here to leave comments and suggestions for improving your RSNA Web experience.
- ▶ **Things to Know:** Update your profile, search the RSNA Membership Directory and check out information regularly updated for members.
- ▶ **Exclusive Benefits:** Access direct links to member features including annual meetings, grant opportunities, online education resources, myRSNA and much more.
- ▶ **Belong:** Tell a colleague—joining RSNA is now as easy as clicking the colorful button and choosing your membership type.
- ▶ **Extras:** Additional icons at the bottom of the page direct you to essential tools and interactive content that's relevant to your online experience.



COMING NEXT MONTH

While equipment like PACs and CT scanners makes radiology one of the most power-hungry departments in a hospital, facilities can significantly reduce energy consumption by implementing some fairly simple measures. Read about them in next month's *RSNA News*.

Make Technology Work for You



See how RSNA's free informatics tools and initiatives are designed to support the use of electronic health records and make your practice run smoothly.

Go to RSNA.org/Informatics